

- Richard Joseph Jackson,
MD, MPH

State Public Health Officer
California Department of
Health Services
1501 Capitol Avenue

- Suite 6001
MS 0003
Sacramento, CA 95814
- 916 440 7400



RJacks06@dhs.ca.gov



Urban Sprawl and Public Health

DESIGNING, PLANNING, AND BUILDING
FOR HEALTHY COMMUNITIES

Howard Frumkin,
Lawrence Frank
and Richard Jackson

Institute of Medicine

*The purpose of public health is
to fulfill society's interest in*

..... ?

Future of Public Health 1988

Institute of Medicine

*The purpose of public health is
to fulfill society's interest in
assuring the conditions in which
people can be healthy*

July 6, 1999



Disease in the 21st Century

- Diseases and costs of care for Aging Populations.
- Overweight: Diabetes II, Heart Disease
- Mental Disorders: Depression, Anxiety, Developmental, Substance Abuse
- Macro-environment: Climate, Conflict

I Believe:

- The Greatest Threat to Americans' Health is
- How We Manage Our Wealth
- The Supersizing of Everything
- And our over-consuming is not just bad for our environment.

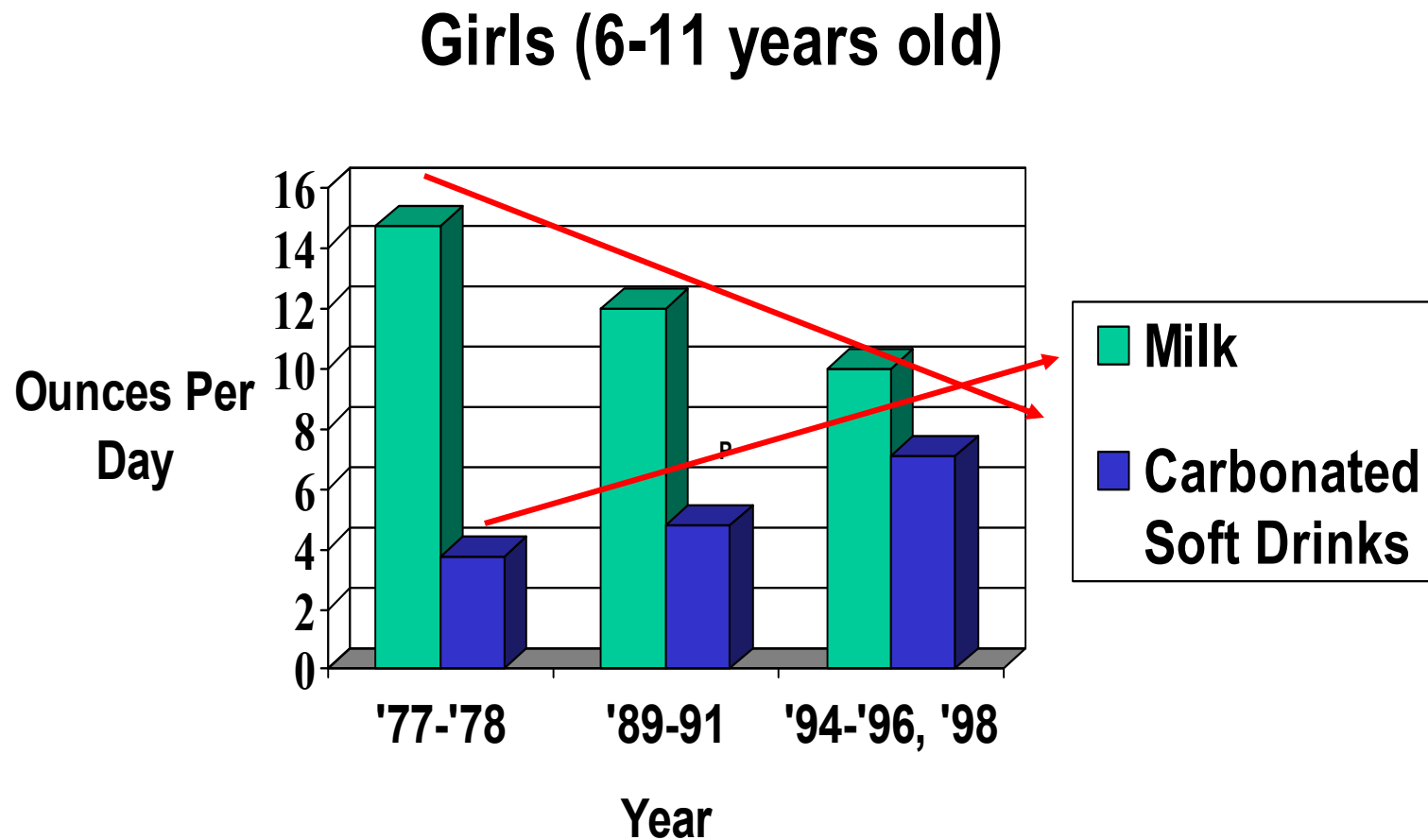
Supersizing of the Food We Eat



Hardee's introduces
new
**Mega-Calorie
“Monster
Thickburger”**

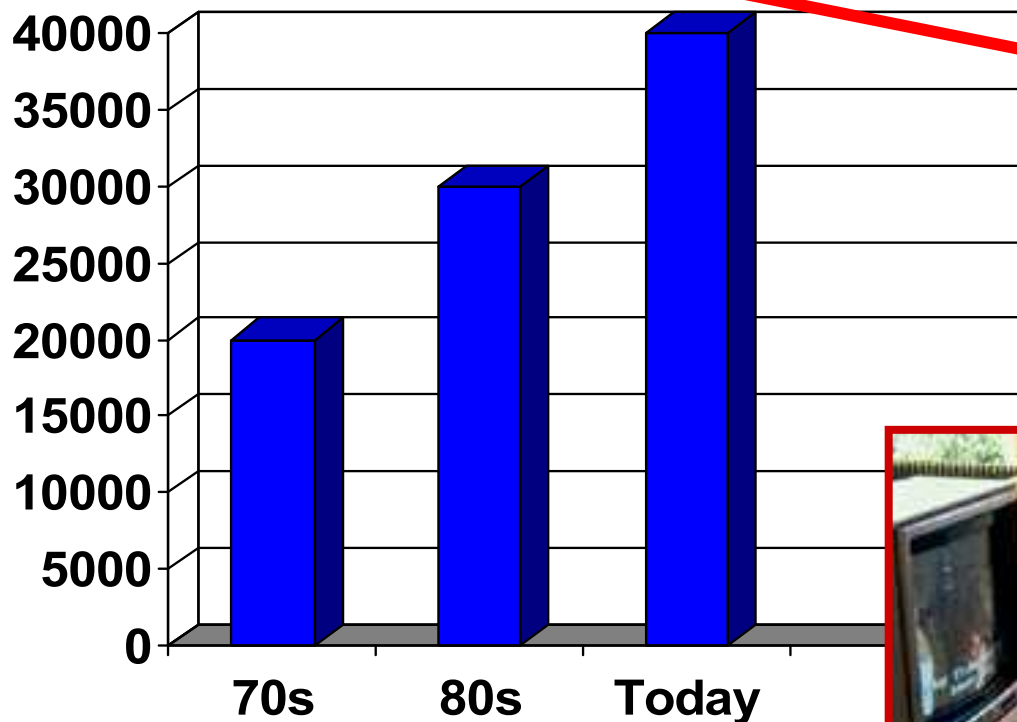
- **1,420 calories**
- **107 grams of fat**
- **7.1 hours of moderate walking**

Supersizing Soda Consumption



-Wilkinson et al. Trends in Food and Nutrient Intakes by Children in the United States. Family Economics and Nutrition Review. 2002; 14(2):56-68.

Supersizing Advertising :Number of TV Ads Seen By Children



40,000 per year



Microsized Fitness of California's Children

Annual California Fitnessgram

- **Conducted in Grades 5, 7, and 9**
- **Measures 6 major fitness areas**
(e.g. aerobic capacity, body composition, flexibility)
- **2004 Results: Who passed all standards?**

25% → Grade 5

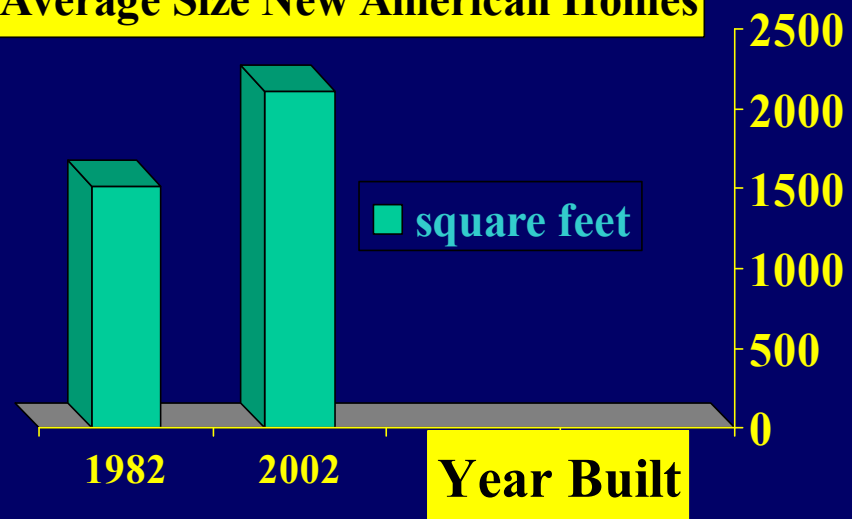
29% → Grade 7

26% → Grade 9

Supersizing Our Homes



Average Size New American Homes



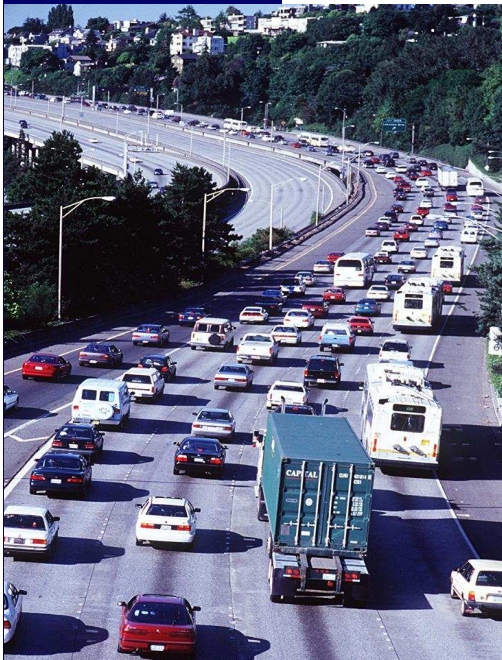
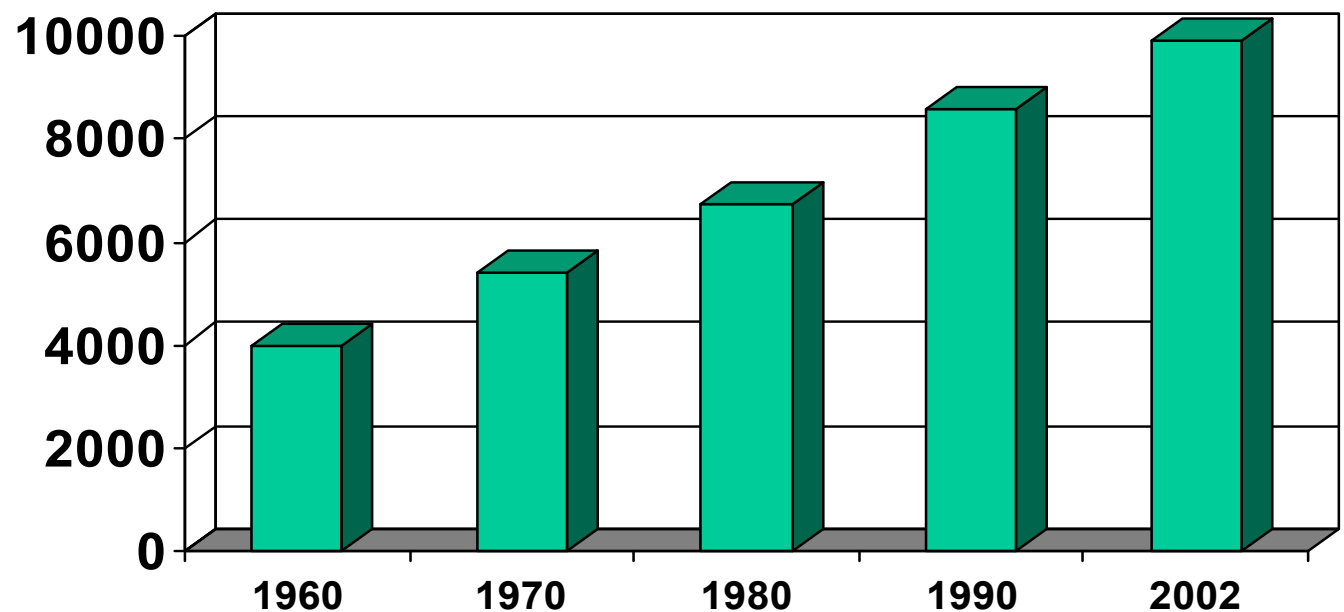
Supersizing our Vehicles



Supersizing Vehicle Travel

US Vehicle Miles Traveled (VMT) Per Capita

Average
VMT



From 4000 to 10,000 VMT per person

Bureau of Transportation Statistics, U.S Department of Transportation,
Transportation Statistics Annual Report, 2004

Supersizing of Roads and Highways



Supersizing Land Consumption



**California Paves or Builds
on over 400 acres every day**

An Authors Guild **Backinprint.com** Edition

"Expands the common understanding of workaholism...will help many individuals recognize that they are not alone, that there may be more rewarding lifestyles."
—*Chicago Tribune*

Working Ourselves To Death

THE HIGH COST OF WORKAHOLISM AND THE REWARDS OF RECOVERY



DIANE FASSEL

Supersizing Work

"Workers in the United States put in more hours than anyone else in the industrialized world."

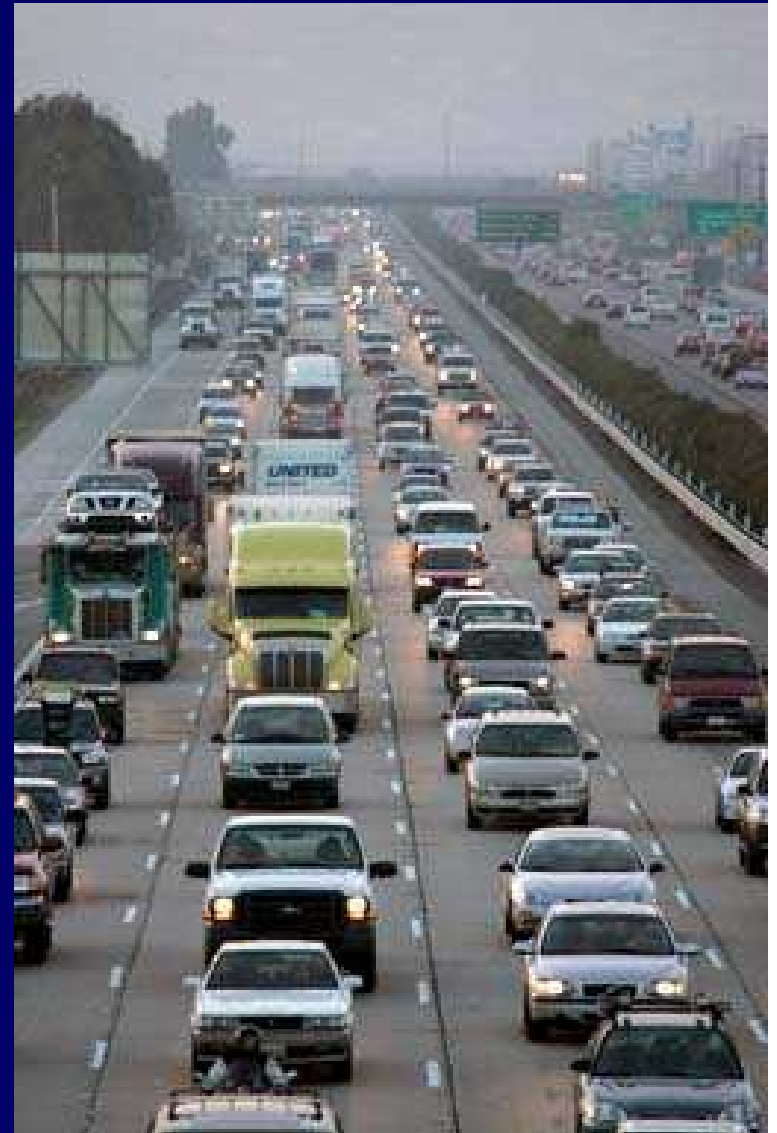
The McGraw-Hill Companies

BusinessWeek

Supersized Commuting

February 21, 2005

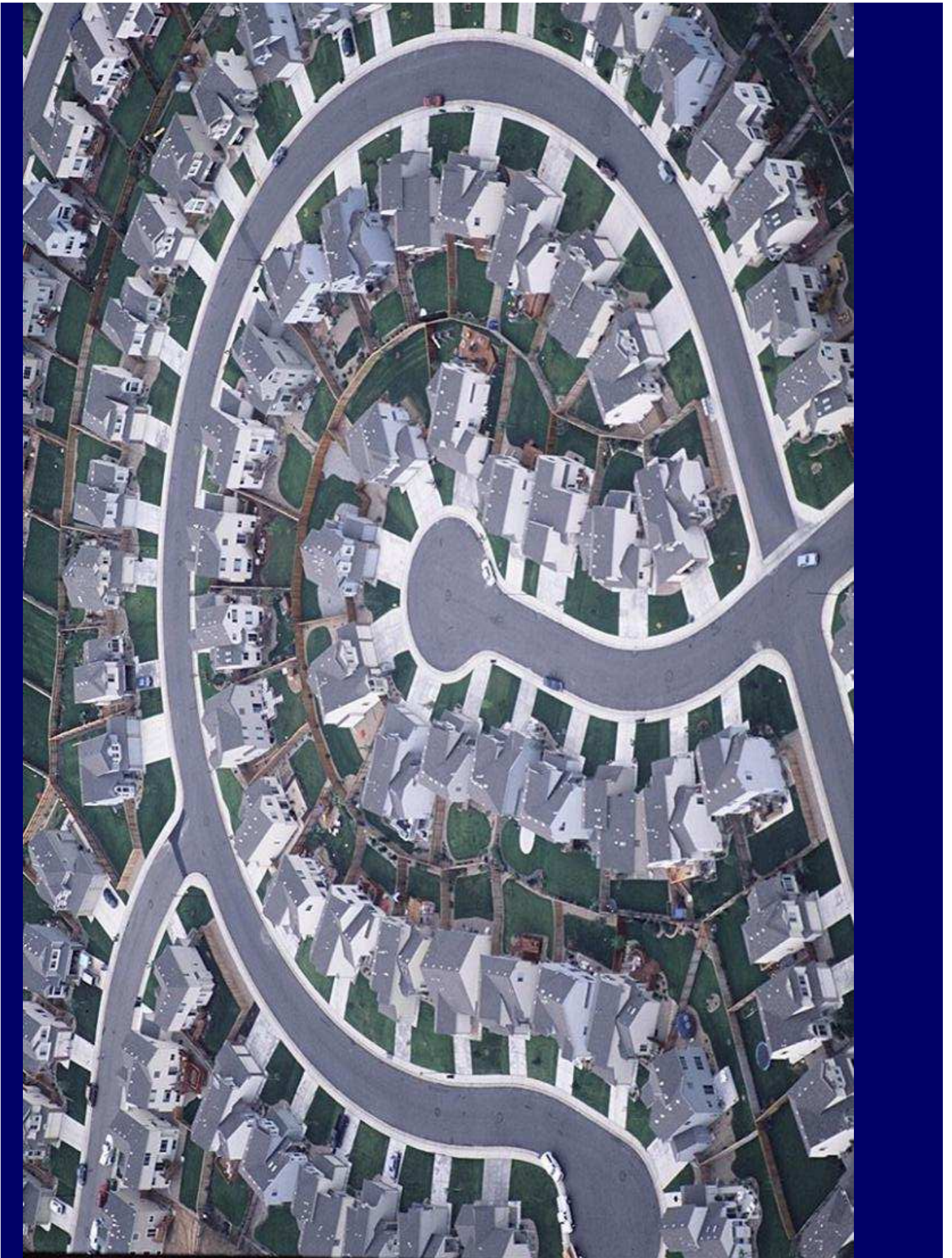
- The Bus Buddies are part of the fastest-growing group of work travelers in the country, people who rarely see their houses in daylight, leave home when their kids are still asleep, and mainline Red Bull just to stay awake. They're known as extreme commuters. *They spend at least a month of their lives each year traveling a minimum of an hour-and-a-half to work and back.*



Chronicle / Michael Maloney

“It is the occupation of a child to immerse herself in her environment”.

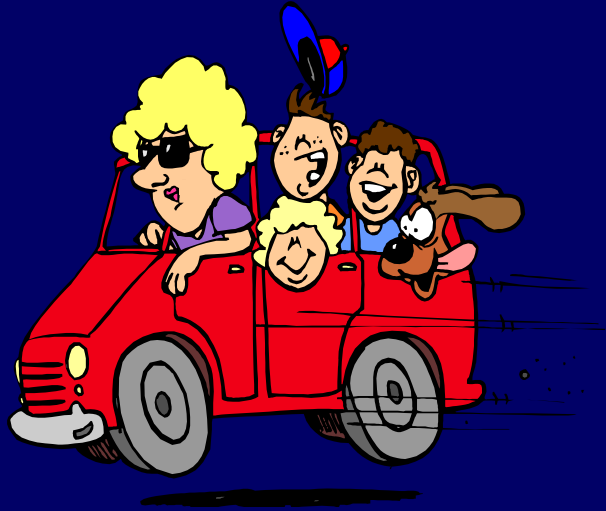




Overall: Compared to 1969

Americans drive:

- 88% farther to shop
- 137% farther for errands

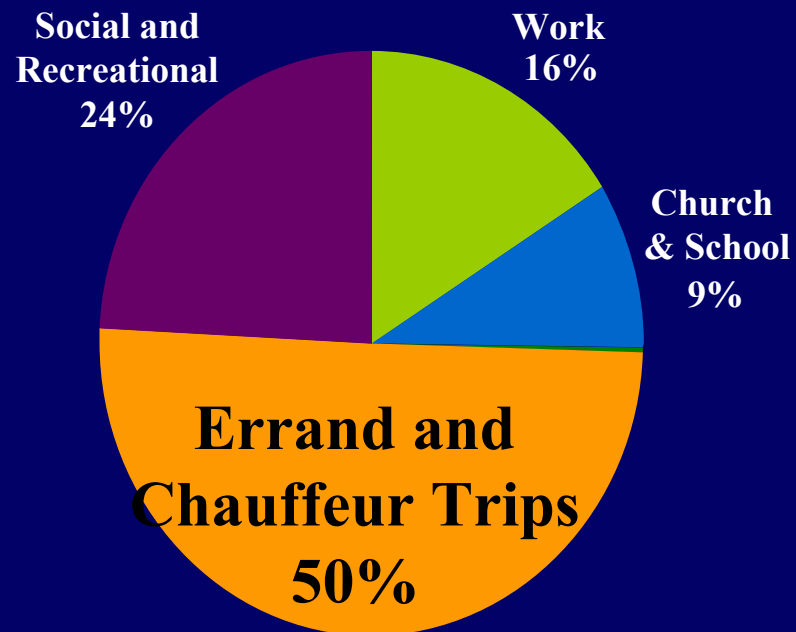


Mega-Mileage Moms

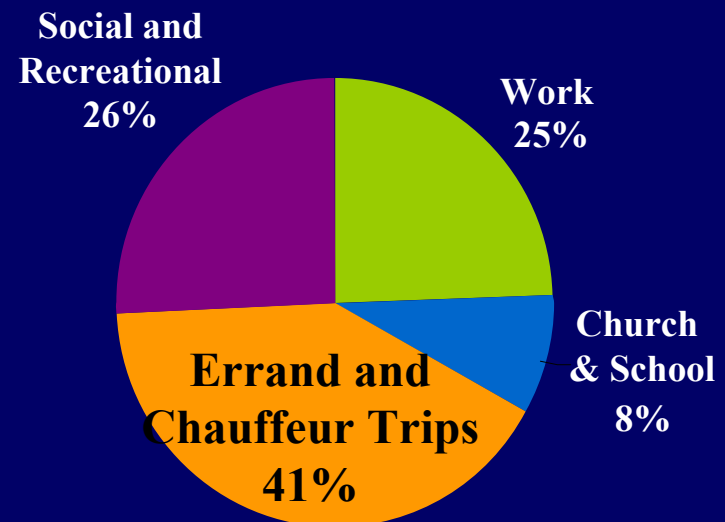
- Family “chauffeur”
- Average minutes per day spent in car:
 - Women overall: 64 minutes
 - Single mothers: 75 minutes

Women and Men's Trip Making by Purpose, 1995

Women



Men



Source: Surface Transportation Policy Project

- Only **13%** of children walk or bike to school as compared to **66%** in 1974.
(CDC, 2000)
- About **85%** of children are driven to school in private vehicles— even when the students live less than two miles away.
- **50%** of children who live less than a mile away are driven to school regularly.
(CDC, 2002)



Supersized Schools

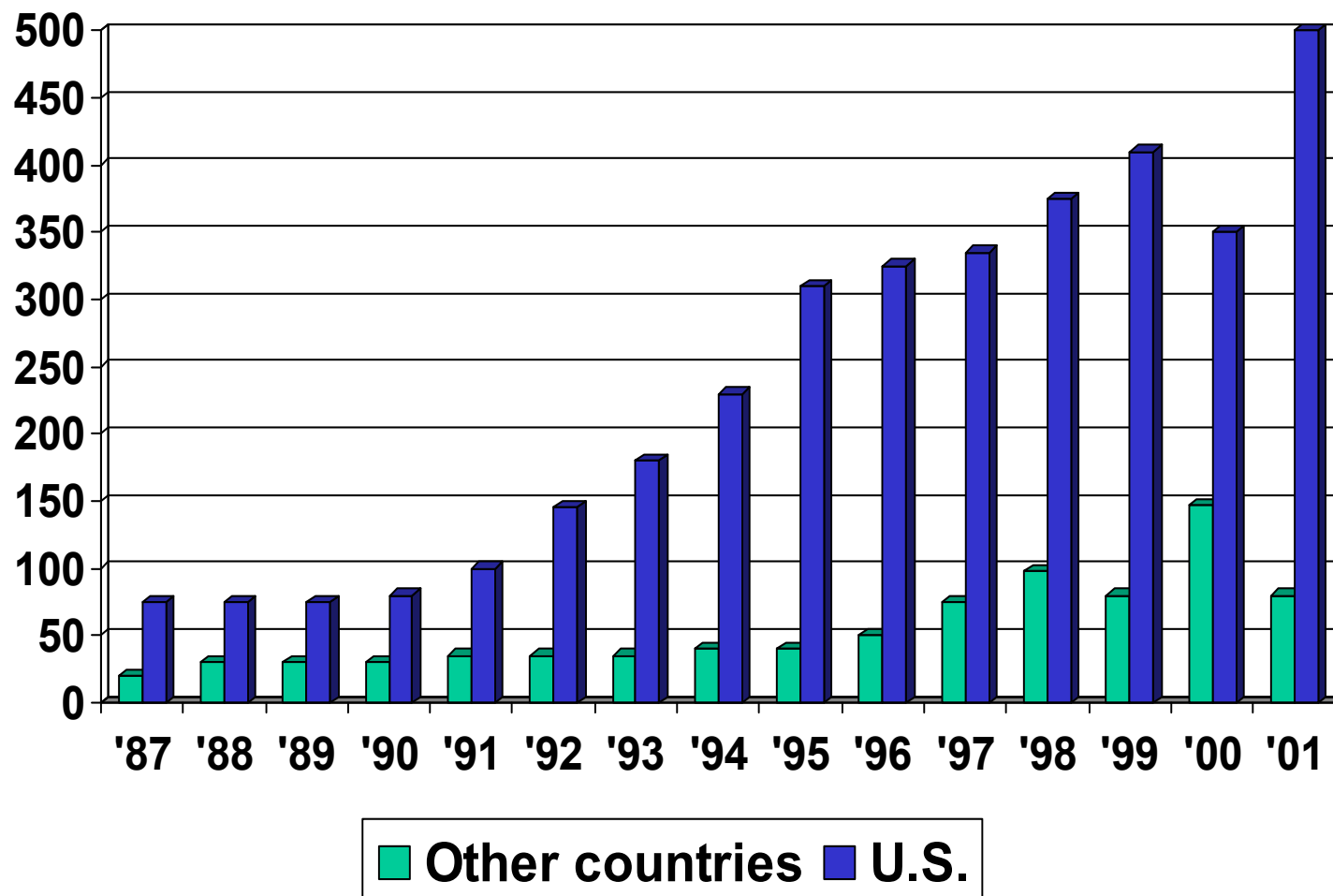


Credit: South Carolina Coastal Conservation League



Credit: Constance E. Beaumont, NTHP

Methylphenidate (Ritalin) Consumption, United States and Elsewhere: 1987 - 2001



Source: Science, Vol. 289, 4 August 2000, p. 721 and International Narcotics Control Board, 2002

- “...students have better attendance, are less likely to drop out, exhibit fewer discipline problems, and perform better when attending a smaller high school.”

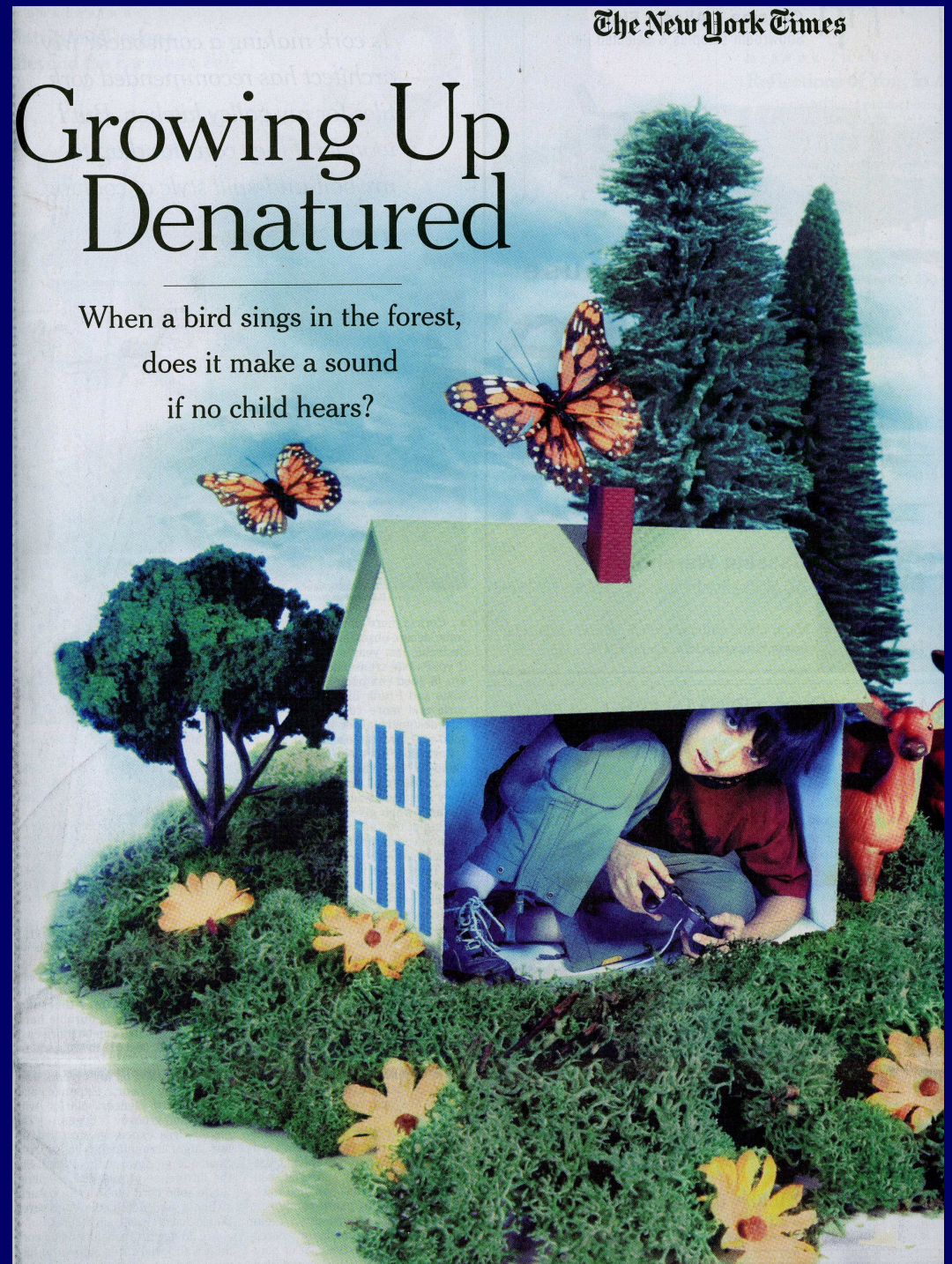


Credit: Constance E. Beaumant, NTHP

Secretary of Education Richard Riley Oct 4, 2000

**“I like to play indoors
better 'cause that's
where all the electrical
outlets are,”**

-fourth grader





LAST CHILD IN THE WOODS

SAVING OUR
CHILDREN
FROM
NATURE-
DEFICIT
DISORDER

RICHARD LOUV

Nature-Deficit Disorder:

**Environmental boredom
flowing from children's
fixation on artificial
entertainment rather than
natural wonders.**

Children's Contact with Nature

- School age children with ADHD who had higher contact with nature showed better concentration, task completion, and following of directions.

*Coping with ADD: The Surprising Connection to Green Play Settings”
Environment and Behavior, 33 (1), 54-77 AF Taylor, FE Kuo, WC
Sullivan, 2001*



The mental health of our Children

- ◆ **More than 1 million children and teens in the US are on antidepressants**
- ◆ **Childhood depression affects 1 in 20 children.**
- ◆ **Anti-depressant use increases by 10% annually in children and adolescents.**

19 million
American
adults

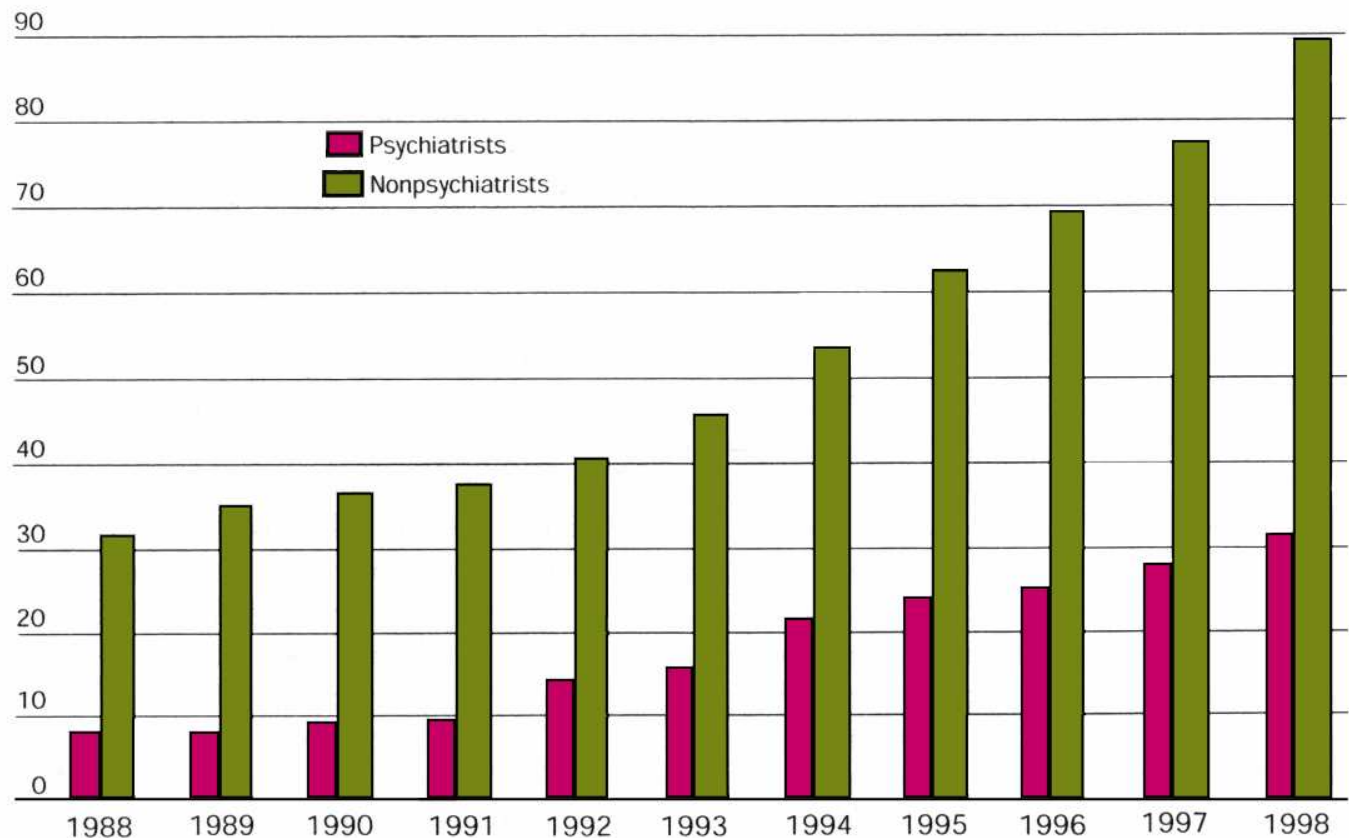
- Leading cause of disability in the U.S. and worldwide



Supersized Rates of Depression

Antidepressant Prescriptions By Physician Specialty, 1988–1998

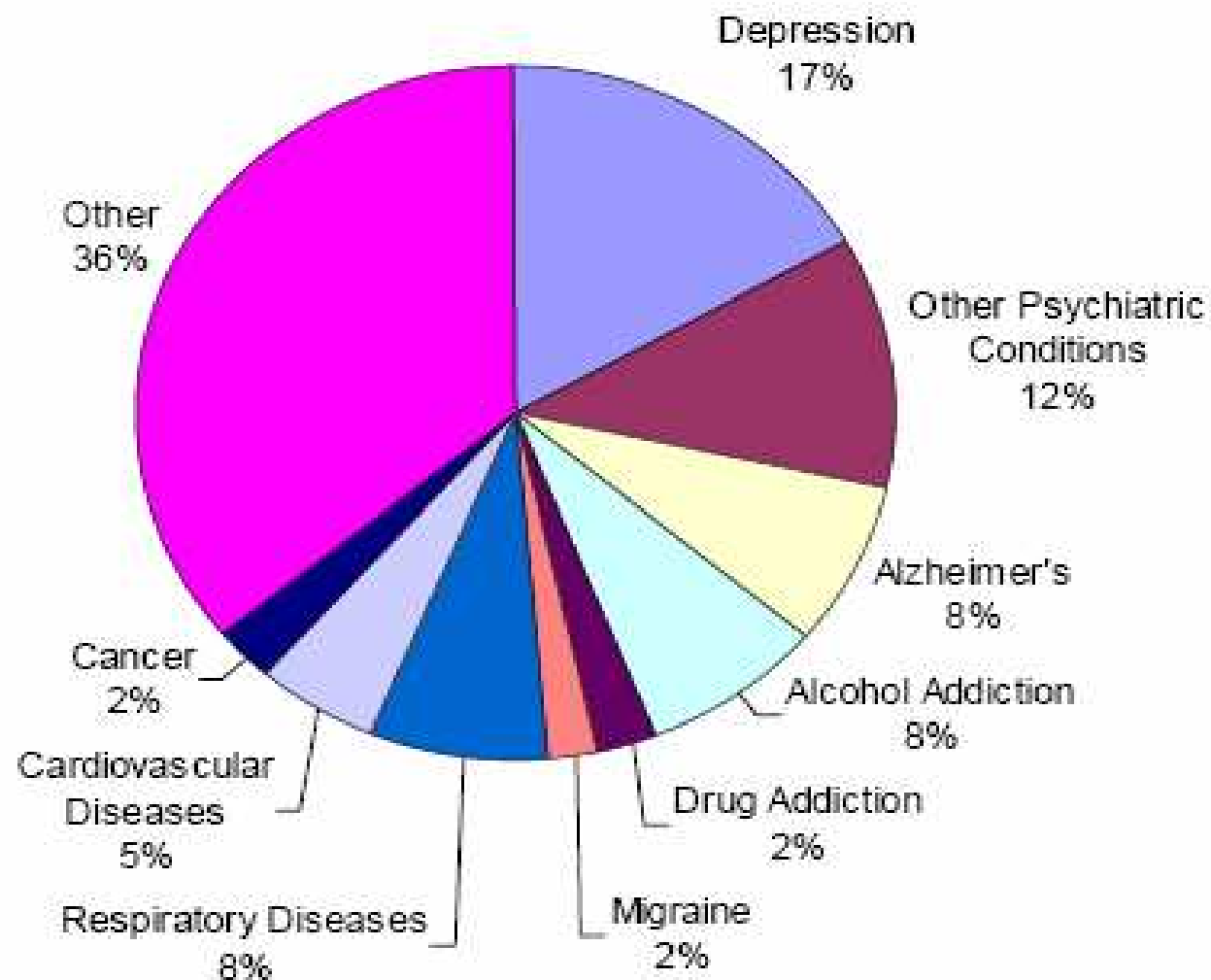
Millions of prescriptions



SOURCE: IMS Health, Inc.
HEALTH AFFAIRS - Volume 19, Number 4

Causes of Disability

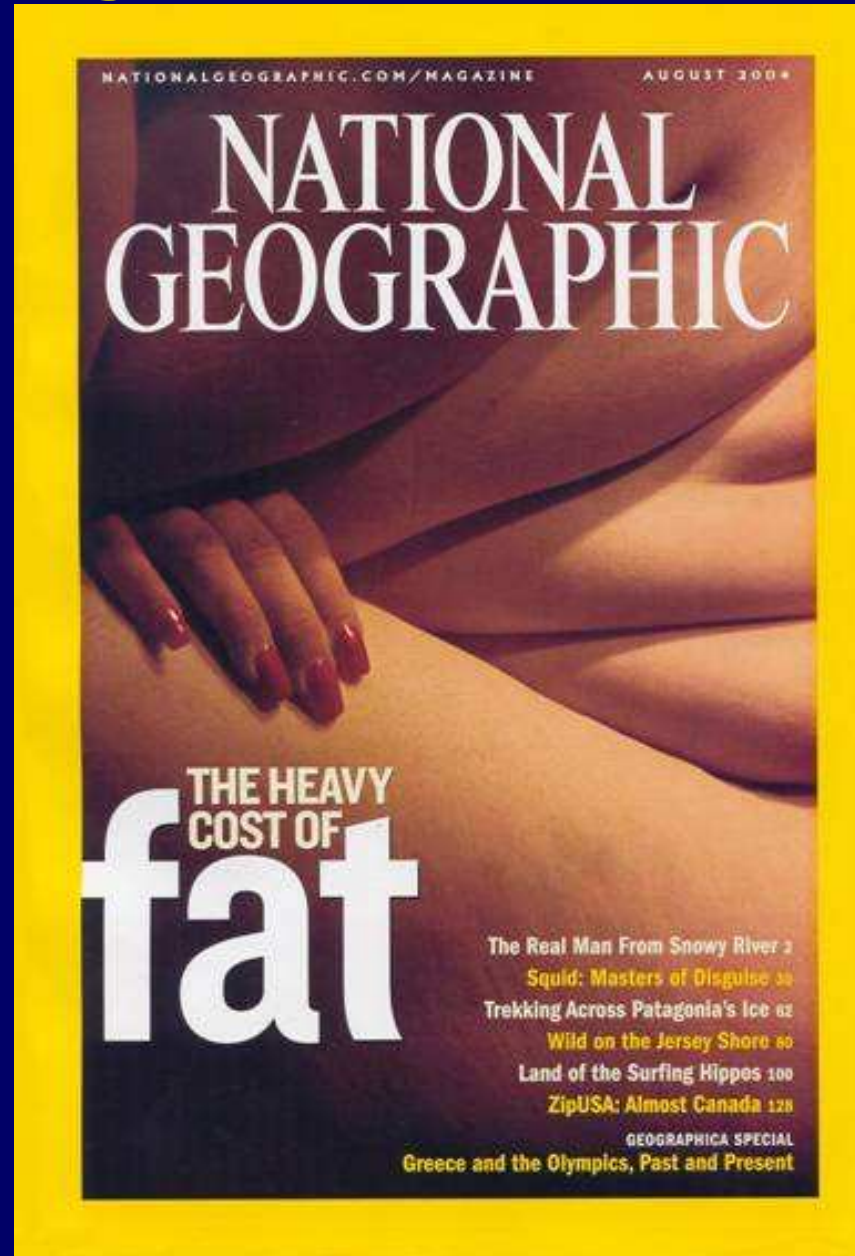
USA and European Union



Places of the Heart



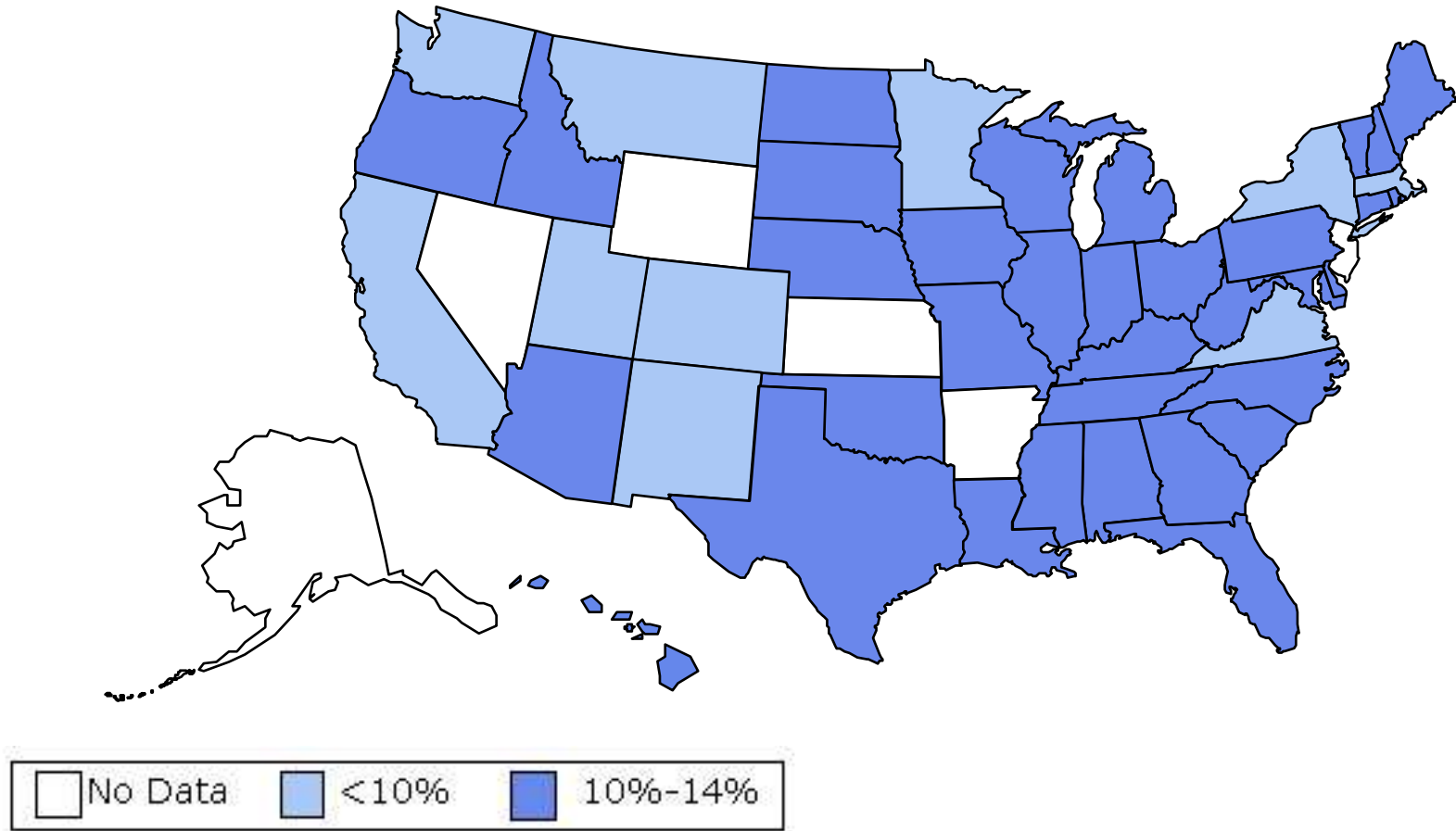
Supersizing our Bodies



Obesity Trends* Among U.S. Adults

BRFSS, 1990

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5'4" woman)

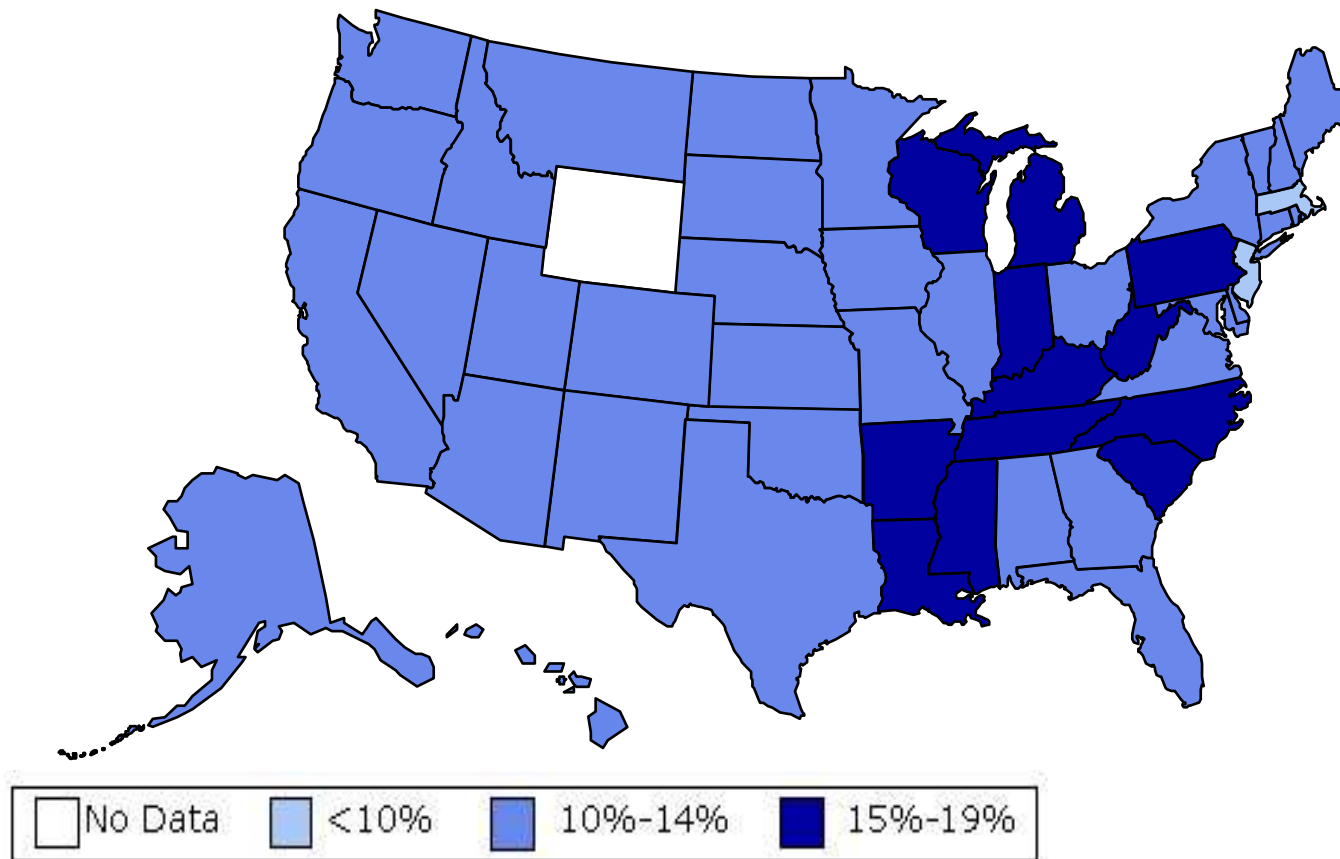


Source: Mokdad A H, et al. *J Am Med Assoc* 1999;282:16, 2001;286:10.

Obesity Trends* Among U.S. Adults

BRFSS, 1993

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5'4" woman)

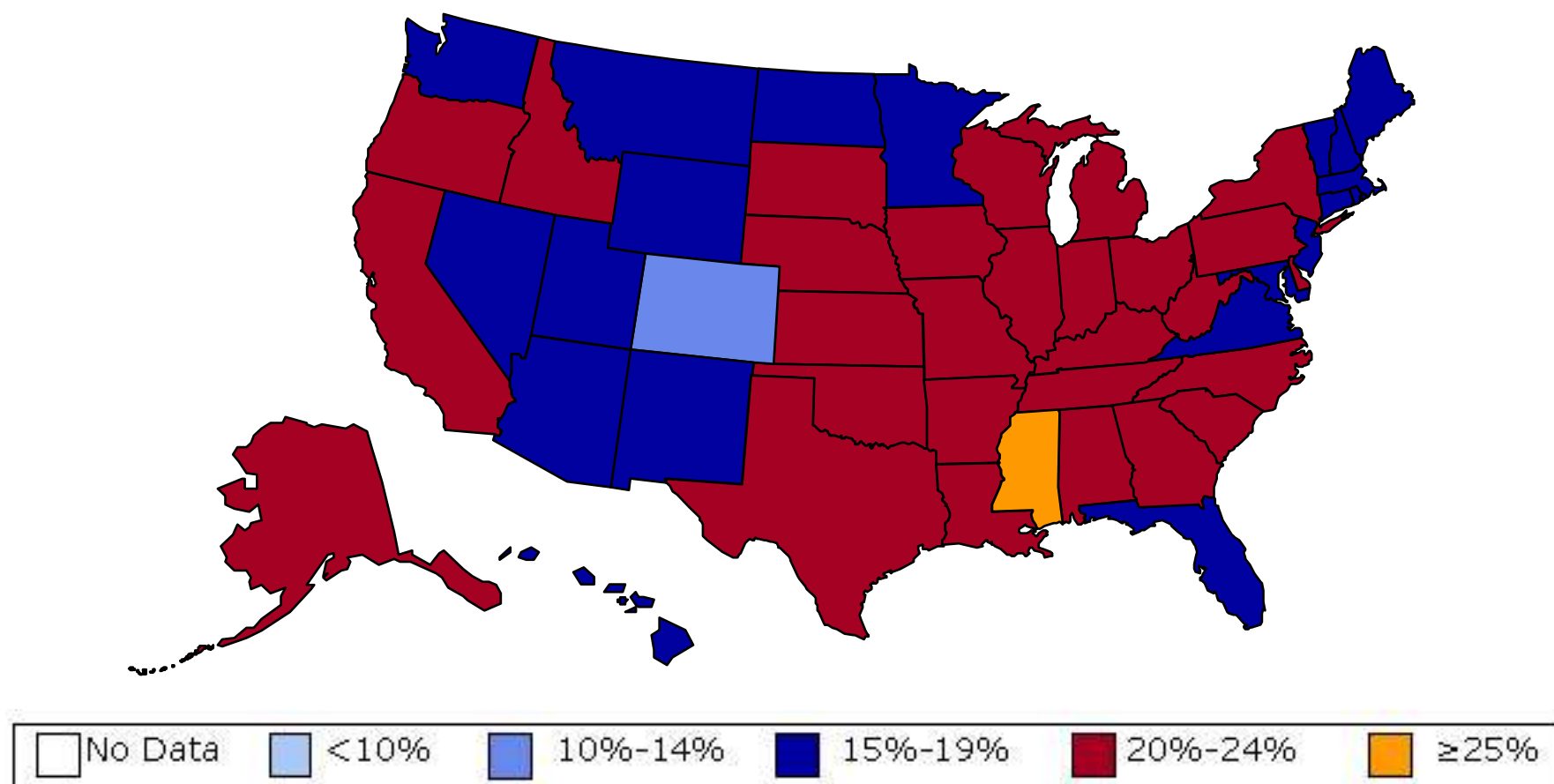


Source: Mokdad A H, et al. *J Am Med Assoc* 1999;282:16, 2001;286:10.

Obesity Trends* Among U.S. Adults

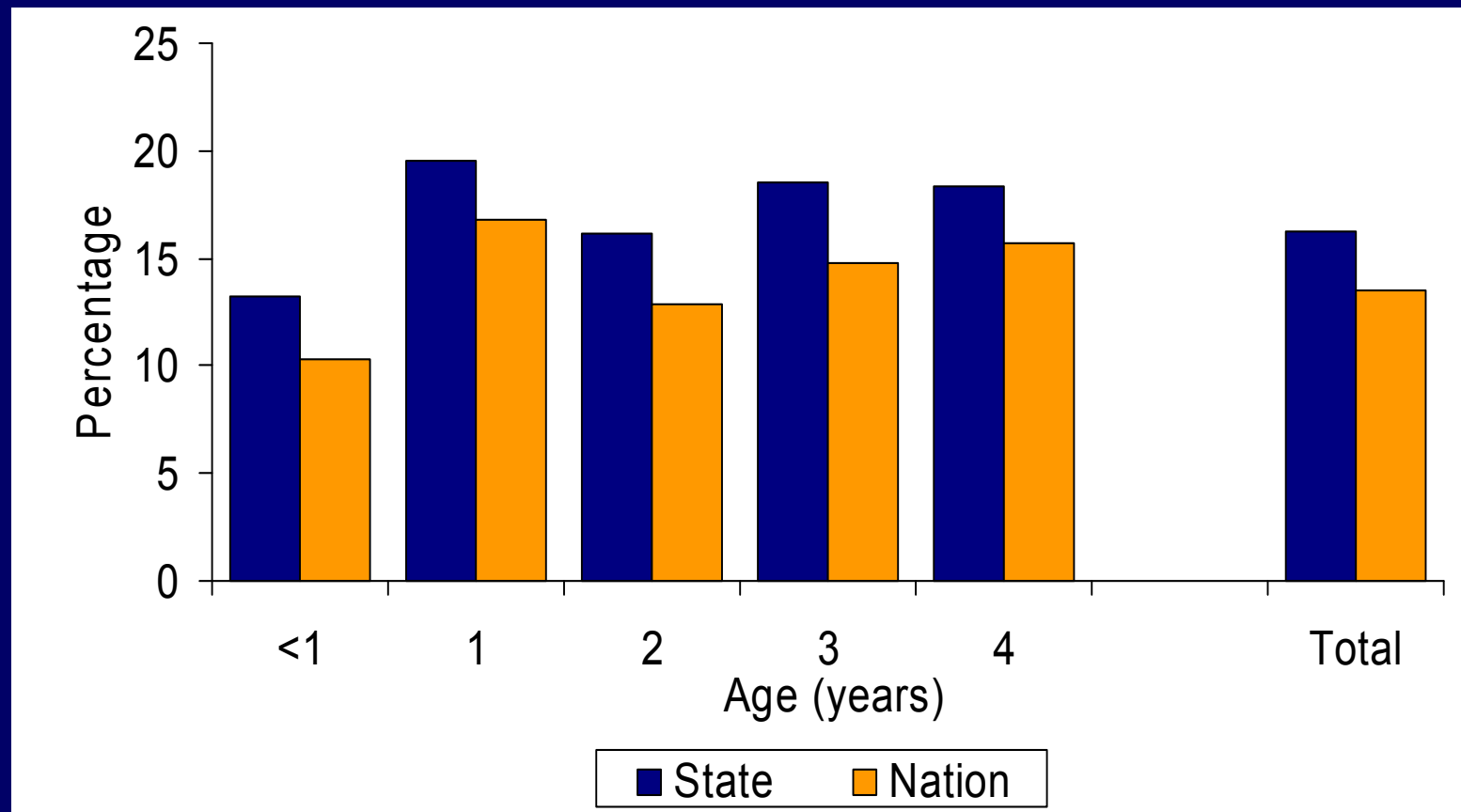
BRFSS, 2001

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5'4" woman)



Source: Mokdad A H, et al. *J Am Med Assoc* 1999;282:16, 2001;286:10.

USA vs. California-Prevalence of overweight* among children aged <5 years by age



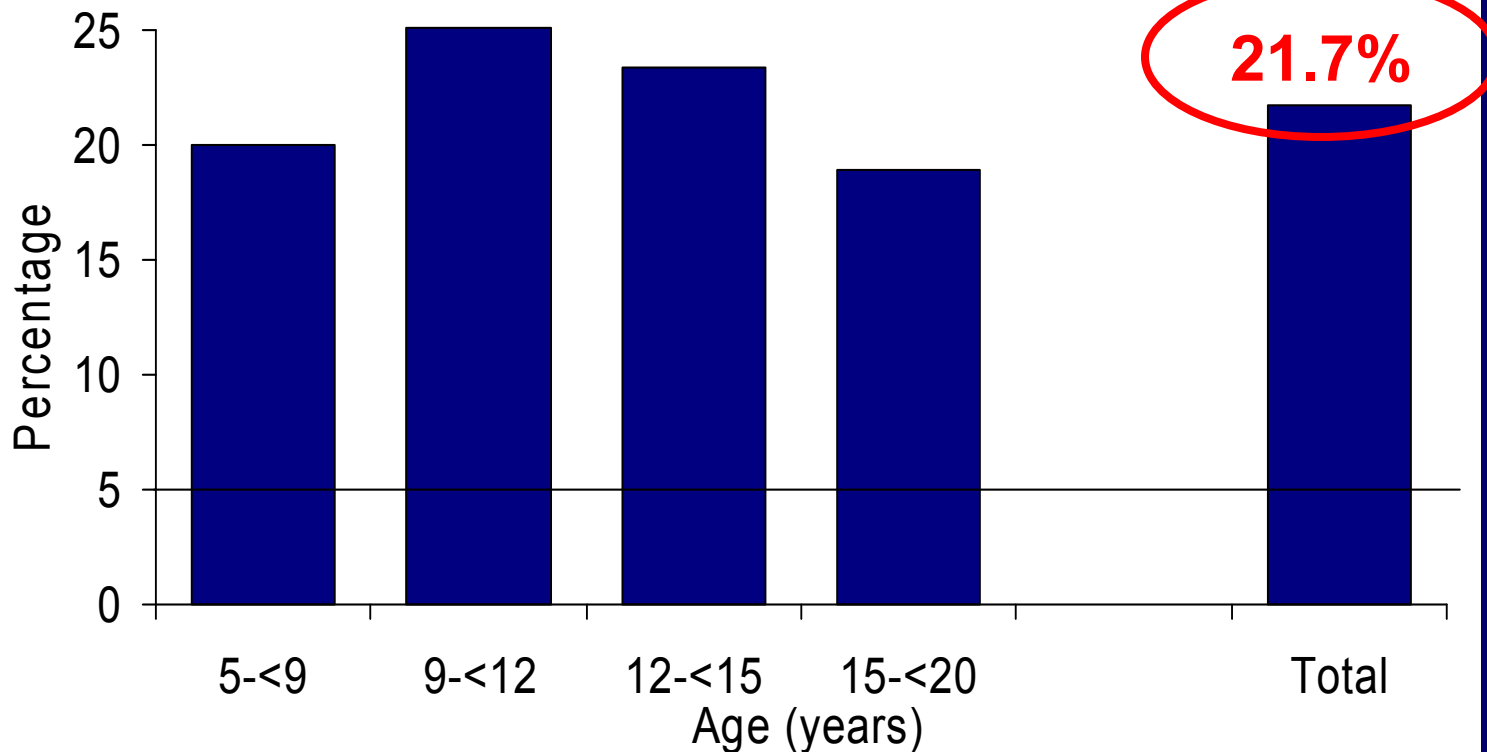
* \geq 95th percentile weight-for-length or BMI-for-age, CDC Growth Charts, 2000.
5% of children are expected to fall above the 95th percentile.

Highest Number of Low-income Overweight Children (age 2-5)

**California's Children Rank
#2!**

California Prevalence of Overweight*

Children aged 5 to <20 years by age



**Year
2010
target****

* \geq 95th percentile BMI-for-age, CDC Growth Charts, 2000.

** Year 2010 target: reduce the proportion of children and adolescents aged 6 to 19 years who are overweight to 5%.

Obesity linked to knee tears, joint problems

- **Overweight ...**

- **Individuals are 3 times more likely to have a cartilage tear.**
- **May lead to 425,000+ annual knee operations.**



Heaviest men → 15 times more likely of having torn knee cartilage.
Heaviest women → 25 times more likely.

US Obesity Woes Put a Strain on Hospitals



HEALTH

May 1, 2002

FROM THE ARCHIVES: May 1, 2002

U.S.'s Obesity Woes Put a Strain On Hospitals in Unexpected Ways

By RHONDA L. RUNDLE
Staff Reporter of THE WALL STREET JOURNAL

When an extremely heavy man spent several weeks at a Kaiser Permanente hospital in Fresno, Calif., two years ago, employees suffered a string of injuries providing routine care for the nearly 500-pound patient.

"We can document five injuries, but there may have been as many as 11 from anecdotal evidence," says Barbara Smisko, director of Western environmental health and safety services at Kaiser, the Oakland, Calif., health-maintenance organization. "It's a dramatic story, but it characterizes the kinds of things that happen to patients and staff every day."

The fact that more Americans are obese is putting a new strain on the nation's health-care system in

OBESITY IN AMERICA

- Health-Care Costs for Obesity Top Those Related to Smoking¹ 03/12/02
- Obesity May Soon Kill More Americans Than Cigarettes, Surgeon General Says² 12/13/01

Adjusting for Special Needs

A sampling of hospital products for obese patients:

Product/Company	Features	List Price
Bariatric wheelchairs Gendron	Up to 32-inch wide seat and weight capacity up to 850 lbs.; can be custom-built to any patient requirement	From \$680 to \$4,130
Burke Tri-Flex bed Burke	1,000 pound patient capacity; fully electric; clears 43-inch doorways	\$11,995
First Step Select Pressure Relief Mattress Overlay Kinetic Concepts	Adjustable air pressure in mattress; non-skid material; weight capacity up to 650 lbs.	Not available
Magnum II Bariatric Patient Care System Hill-Rom	A bed that functions as a chair and transport vehicle; holds up to 600 lbs.	\$26,000 and up
UltraTwin	Lifting	\$11,000

Advocacy Center in San Diego. "I get calls and e-mails on an average of five to 10 a month" from people who "sought treatment at a hospital and were told that it couldn't take care of them," he says.

Certainly, some hospitals view the growing popularity of weight-loss surgery as an opportunity -- both to build business and to improve obesity treatment in their communities. They are setting up bariatric wings for gastric surgery, which reduces the capacity of a patient's stomach. The American Society for Bariatric Surgery estimates there were 57,200 procedures last year, a 29% increase from 2000. "We don't see it slowing down anywhere," says Georgeann Mallory, executive director of the Gainesville, Fla., association. The average hospital cost for bariatric surgery is about \$20,000, she says.

More commonly, though, hospitals worry about the safety of nurses, physical therapists, and other

Double and Triple-wide New Market Segment

New York Times: Sept 28, 2003

Double and Triple-wide New Market Segment



New York Times: Sept 28, 2003

Super-sizing: More Jet Fuel Use

- Mean weight gain of Americans in 1990s:
10 pounds
- Airline distance flown in 2000 in US:
515 billion passenger-miles
- Weight transported 1 mile by 1 gallon of fuel:
7.3 tons (passengers or cargo)
- Jet fuel to transport added weight in 2000:
350 million gallons
- Cost of extra fuel: \$275 million
- CO₂ emissions from extra fuel:
3.8 million tons

Data sources: NCHS; US Dept. of
Transportation

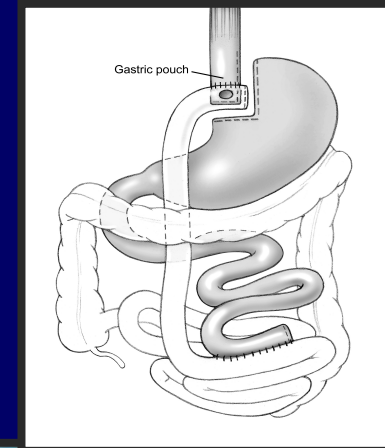


GI Surgery for Severe Obesity

Risk and Complications:

- 10-20% require follow-up surgery
- Abdominal hernia
- Break down of staple line
- Gallstones
- 30% develop nutritional deficiency

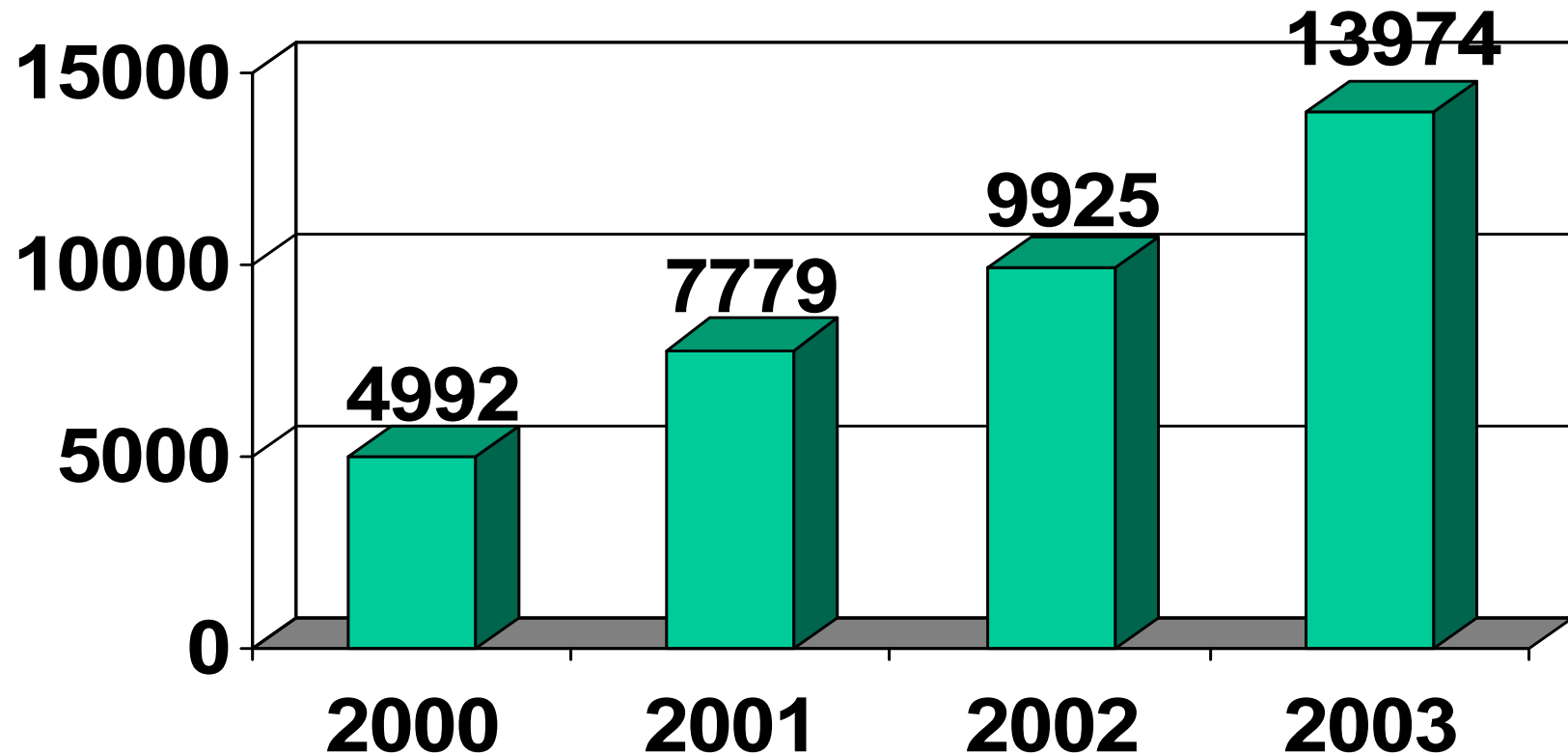
Cost: \$30,000 to \$50,000



Source: NIDDK

Highest Increase Rate of all Pediatric Surgeries

Bariatric Surgery Volume for California Hospitals



Average Cost per Surgery: \$20,000- \$50,000

DIABETES

It Strikes 16 Million Americans

Are You at Risk?

Computer drawing of a human insulin molecule

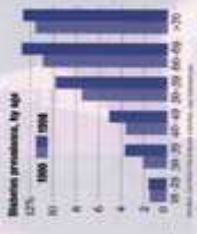
SOCIETY

An American Epidemic

Diabetes

The silent killer: Scientific research shows a 'persistent explosion' of cases—especially among those in their prime
BY JERRY ADLER AND CLAUDIA KALB

SOMETHING TERRIBLE WAS HAPPENING TO YOLANDA BENTLEY'S eyes. They were being poisoned, the fragile capillaries of the retina attacked from within and were leaking blood. The first symptoms were red lines, appearing vertically across her field of vision; the lines multiplied and merged into a haze that shut out light entirely. "Her blood vessels inside her eye were popping," says her daughter, Jannette Roman, a Chicago college student. Bentley, who was in her late 40s when the problem began four years ago, was a rising star in the publishing world. After five surgeries, she has regained vision in one eye, but the other is completely useless. A few weeks ago, awakening one night in a hotel bedroom, she walked into a door, setting off a paroxysm of pain and nausea that hasn't let up yet. And what caused this excruciating pain was nothing as exotic as pesticides or contagious viruses. What was poisoning Bentley was sugar.

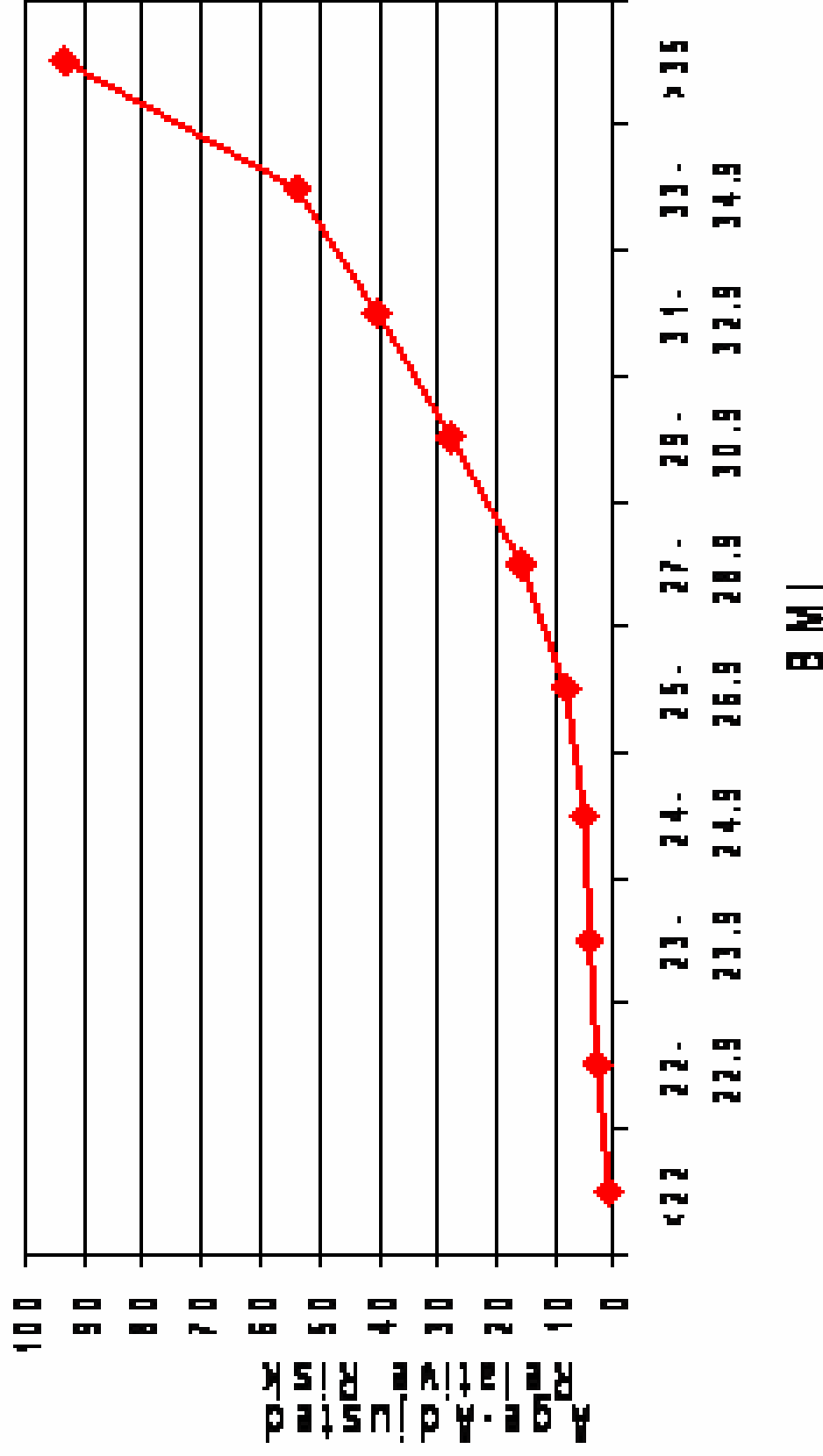


Heredity
Genes help determine whether you'll get diabetes. In many families, multiple generations are struck. But heredity is not destiny—especially if you eat well and exercise.

YOLANDA BENTLEY AND JANNETTE ROMAN. BENTLEY'S SISTER AND TWO BROTHERS DIED FROM COMPLICATIONS OF THE DISEASE.

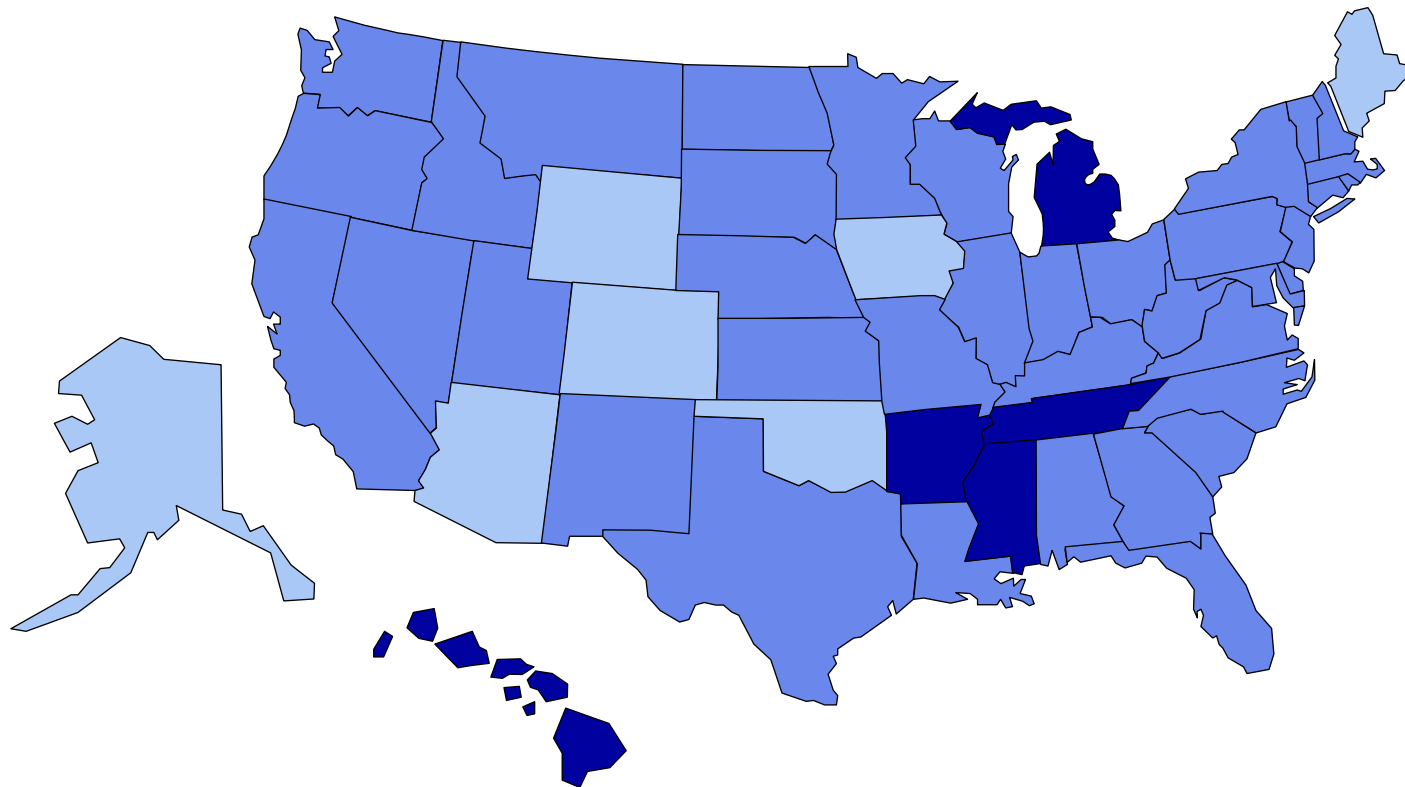
Link Between Obesity and Type 2 Diabetes:

Nurses Health Study



Colditz GA et al. *Ann Intern Med.* 1995;122:481-486.

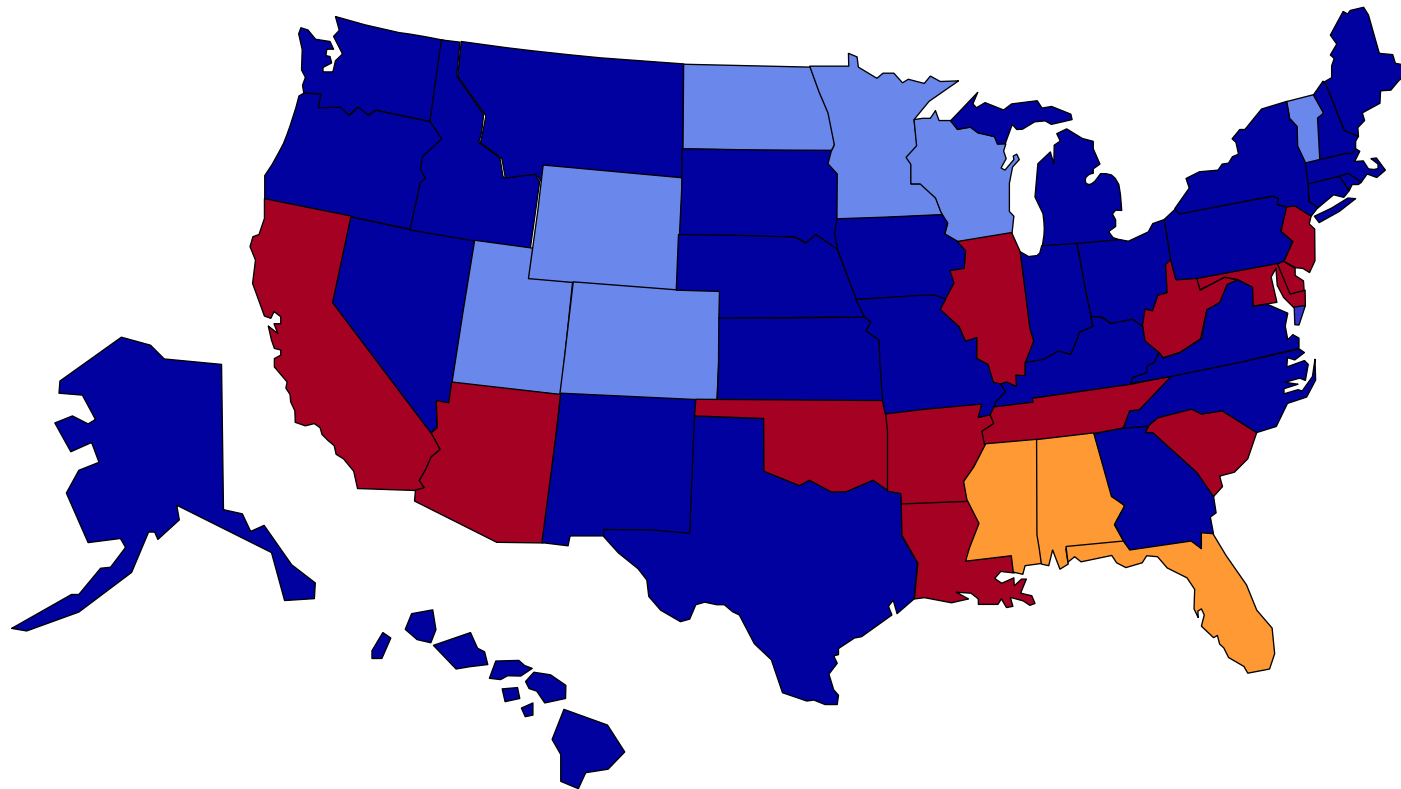
Diabetes and Gestational Diabetes Trends Among Adults in the U.S., BRFSS 1993-94



No Data ☐ <4% ☐ 4%-6% ☐ 6%-8% ☐ 8%-10% ☐ >10%

Mokdad AH, Ford ES, Bowman BA, et al. Prevalence of obesity, diabetes, and other obesity-related health risk factors, 2001. JAMA 2003 Jan 1;289(1).

Diabetes and Gestational Diabetes Trends Among Adults in the U.S., BRFSS 2001



No Data  $<4\%$  $4\%-6\%$  $6\%-8\%$  $8\%-10\%$  $>10\%$

Mokdad AH, Ford ES, Bowman BA, et al. Prevalence of obesity, diabetes, and other obesity-related health risk factors, 2001. JAMA 2003 Jan 1;289(1).

Diabetes Projected Risks: For Babies Born in 2000

Girls: 38% lifetime risk

- If diabetic before age 40, Lifespan shortened by 14 years (Quality of life by 19 years)

Boys: 33% lifetime risk

If diabetic before age 40, Lifespan shortened by 12 years. (Quality of life by 22 years)

V Narayan et al: JAMA 8 Oct 2003

The Atlanta Journal-Constitution / Sunday, June 15, 2003

CDC: Diabetes to afflict 1 in 3 born in 2000

Scientist says
kids must
eat healthier,
exercise more

By JANET McCONNAUGHEY
Associated Press

New Orleans — One in three U.S. children born in 2000 will become diabetic unless many more people start eating less and exercising more, a scientist with the Centers for Disease Control and Prevention warned Saturday.

The odds are worse for African-American and Latino children: Nearly half of them are likely to develop the disease, said Dr. K.M. Venkat Narayan, a diabetes epidemiologist at the CDC.

"I think the fact that the diabetes epidemic has been raging has been well-known to us for several years. But looking at the risk in these terms was very shocking to us," Narayan said.

The 33 percent lifetime risk is about triple the American Diabetes Association's current estimate.

by 2050, to 29 million, an earlier CDC study by Narayan and others found.

"These estimates I am giving you now are probably quite conservative," Narayan said in an interview before the diabetes association's annual scientific meeting here.

Narayan said it would be difficult to say whether undiagnosed cases would rise at the same rate.

If they did, that could push the 2050 figure to 40 million or more.

Doctors had known for some time that Type 2 diabetes — what used to be called adult-onset diabetes because it typically showed up in middle-aged people — is on the rise, and that patients are getting younger.

Nobody else had crunched the numbers to look at current odds of getting the disease, Narayan said.

Overall, he said, 39 percent of the girls who now are healthy 2½- to 3-year-olds and 33 percent of the boys are likely to develop diabetes, he said.

For Latino children, the odds are closer to one in two: 53 percent of the girls and 45 percent of the boys. The numbers are about 49 percent and 40 percent for African-American girls

Risk of diabetes during pregnancy

Babies of diabetic mothers are 3-5 times more likely to have serious birth defects:

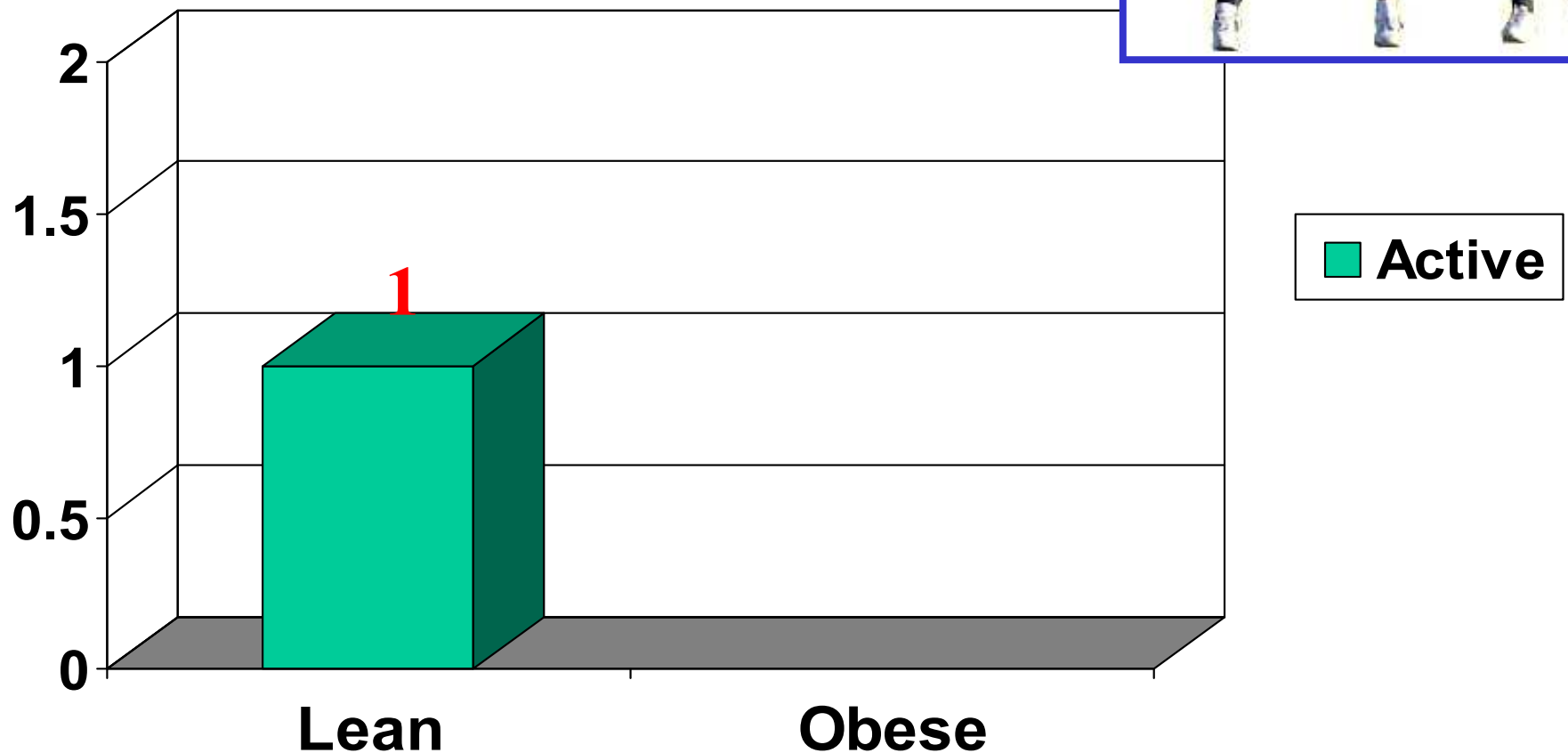
- **Neural tube defect (spina bifida)**
- **Miscarriage**
- **Still birth**
- **Birth injury (due to large birth weight)**



Nurse Study 1976-2000



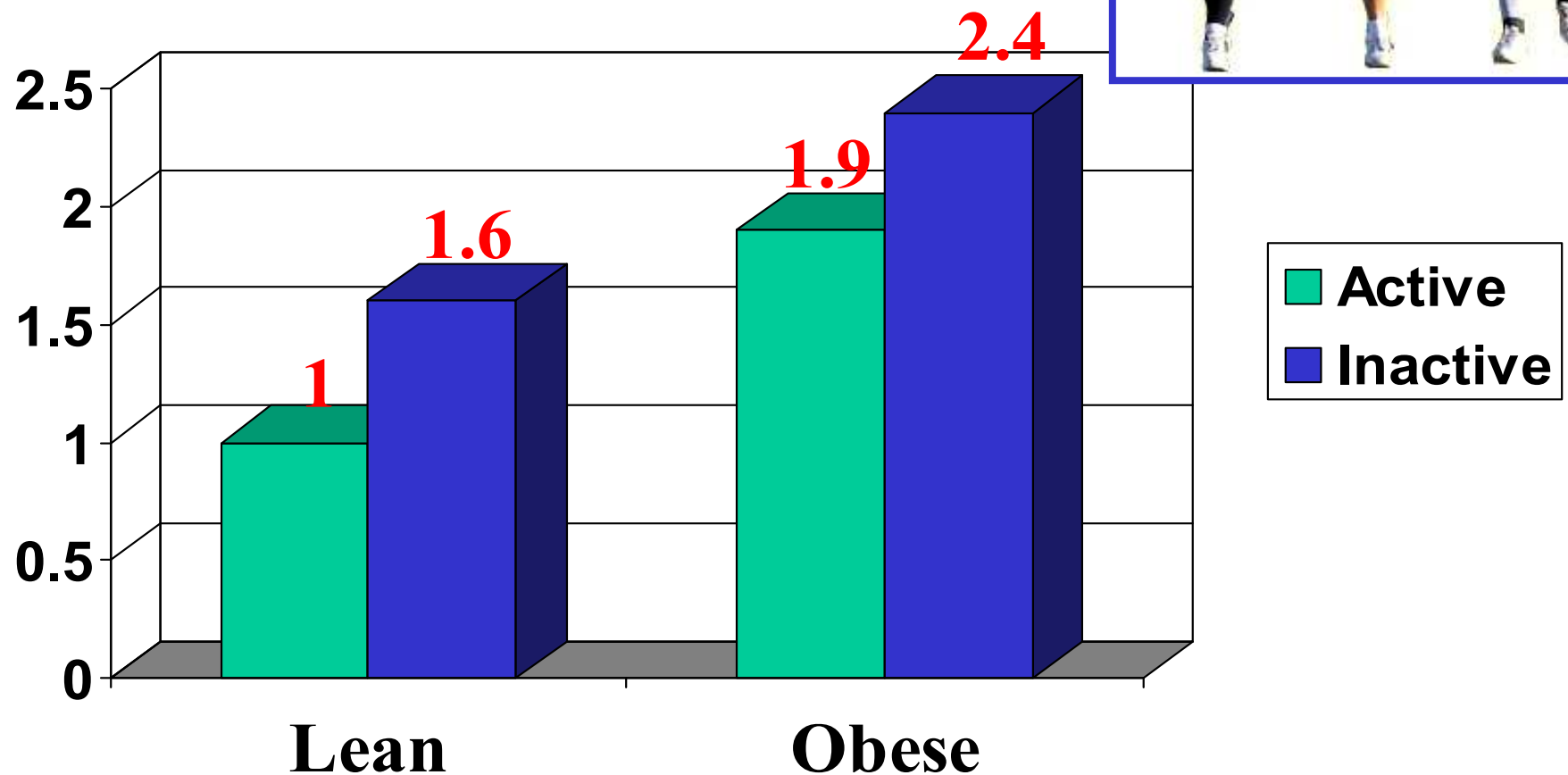
Risk of Death



Nurse Study 1976-2000



Risk of Death

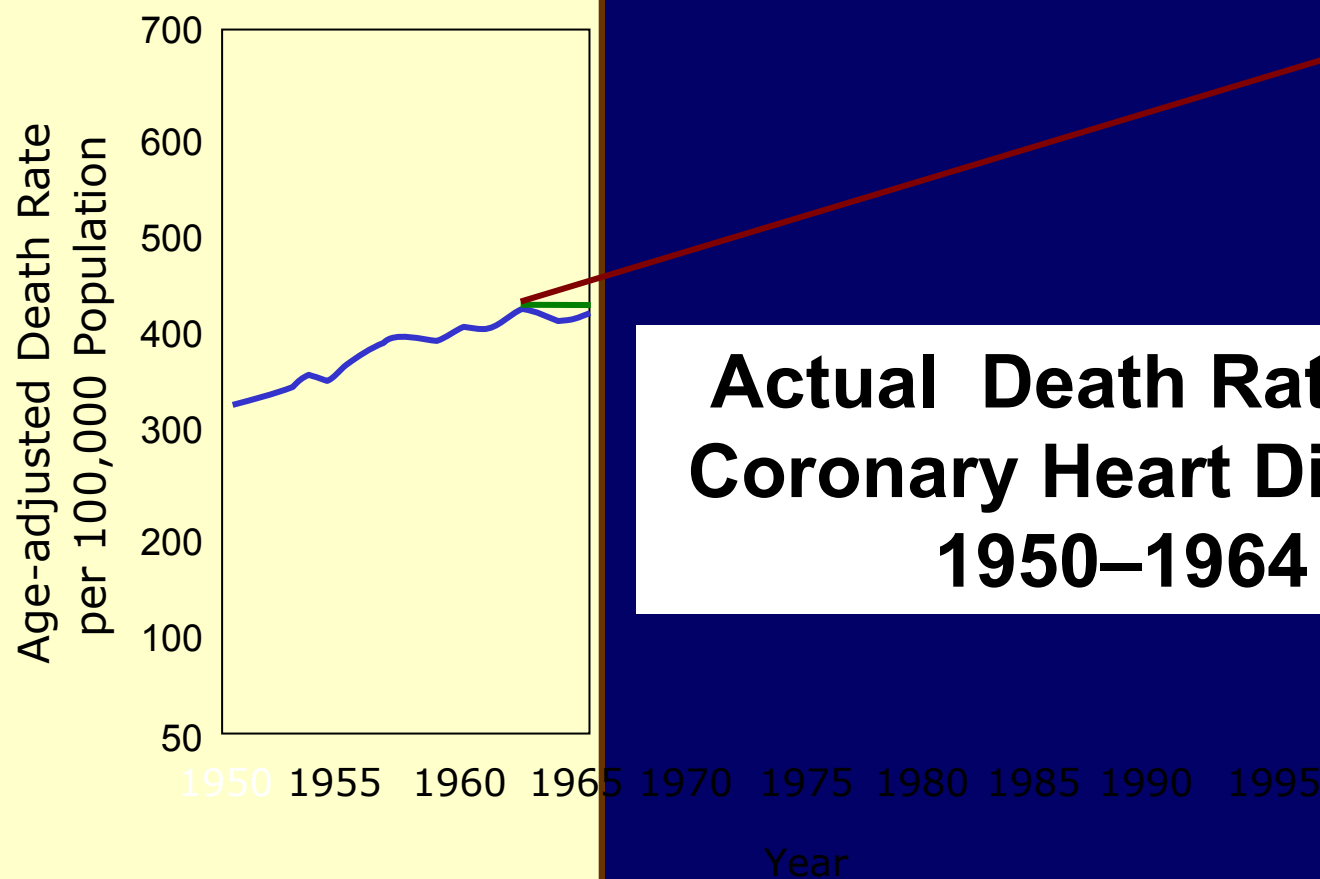


Cost of Overweight, Obesity & Physical Inactivity California, 2000

	<u>Billions</u>
Health Care	\$10.172
Lost Productivity	\$11.168
<u>Workers Comp.</u>	<u>\$.338</u>
Total	\$21.678

Projected Cost for 2005: \$28 BILLION

United States Heart Disease Death Rates

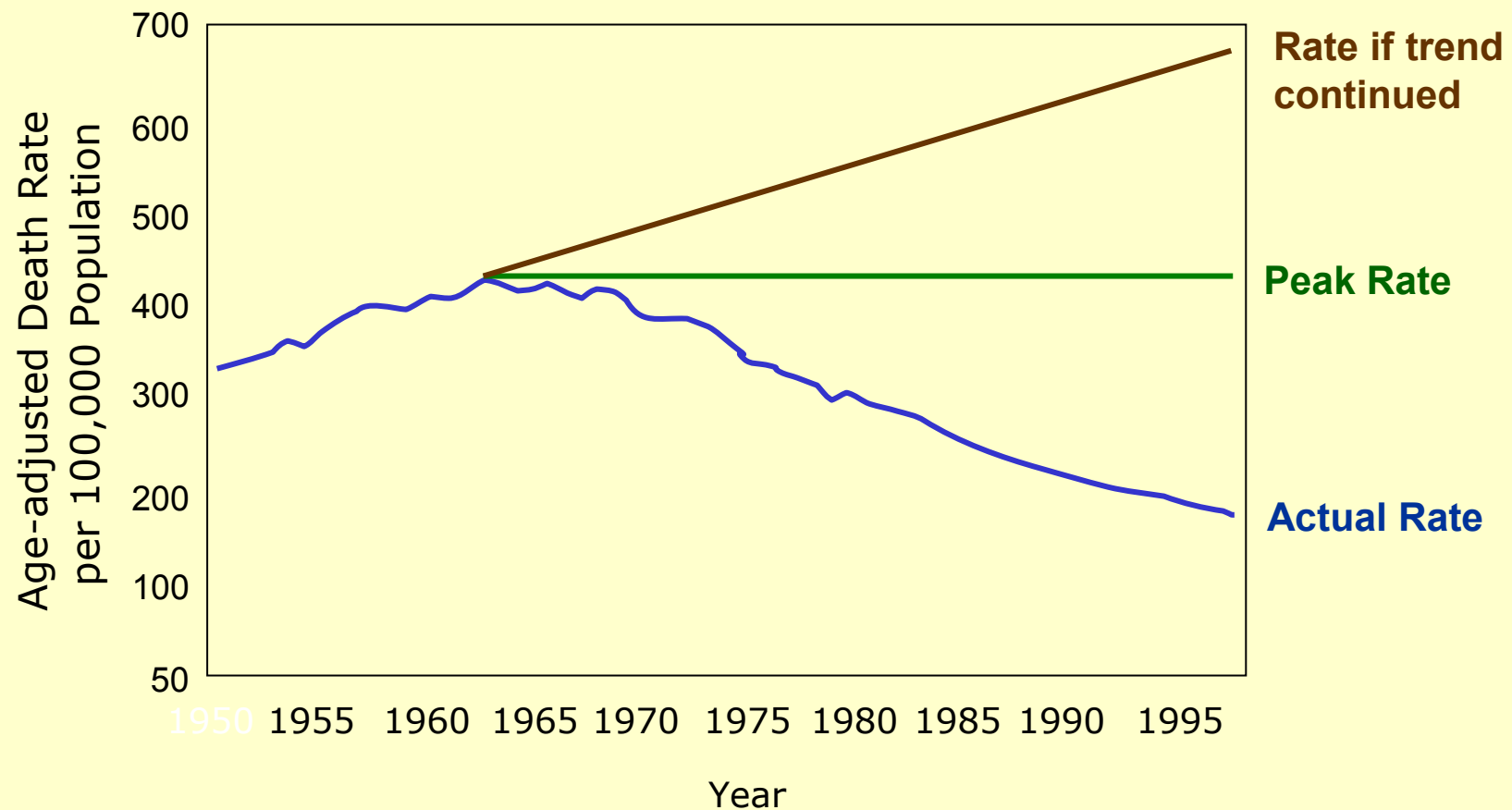


**Actual Death Rates for
Coronary Heart Disease,
1950–1964**

Marks JS. The burden of chronic disease and the future of public health. CDC Information Sharing Meeting. Atlanta, GA: National Center for Chronic Disease Prevention and Health Promotion; 2003.

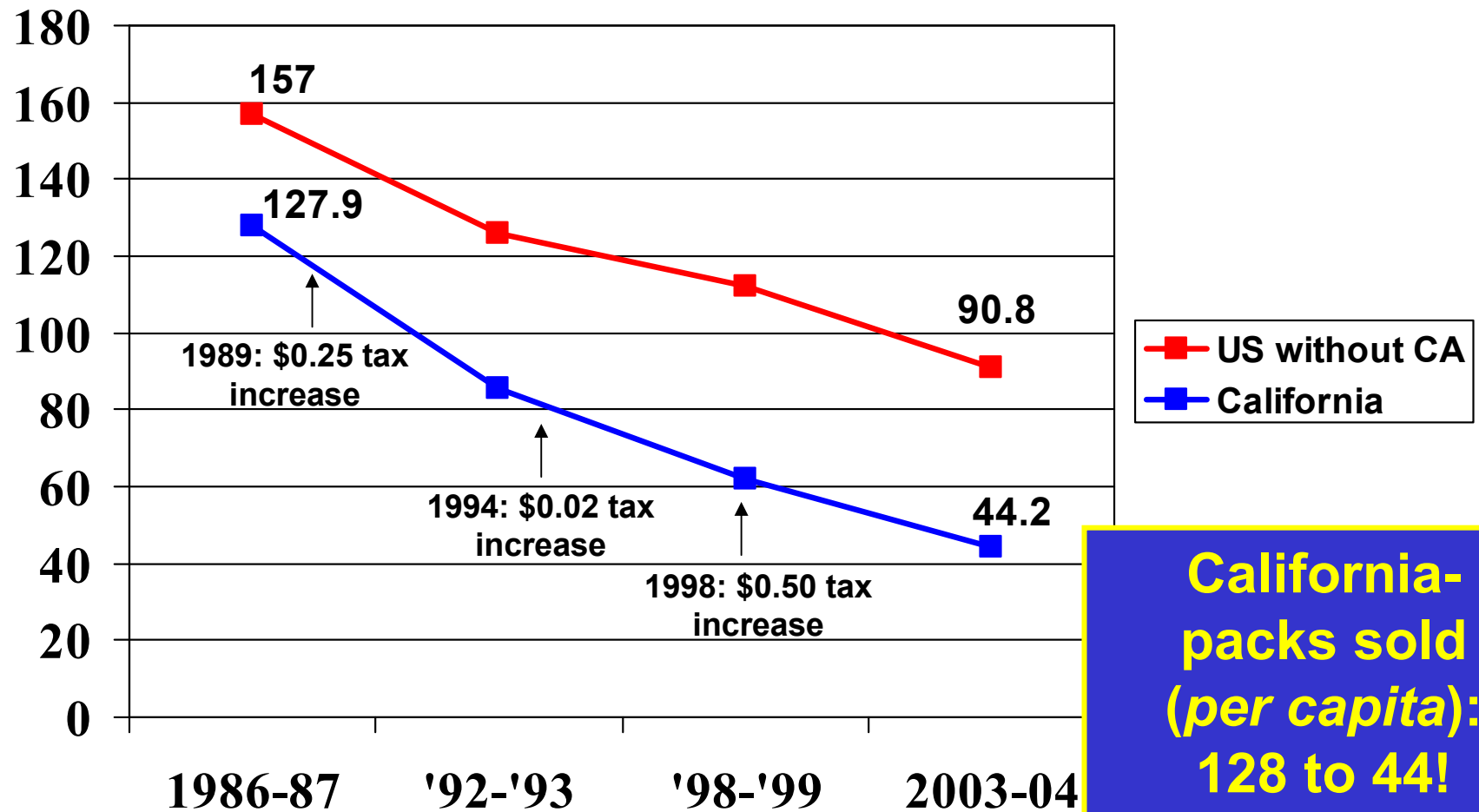
Heart Disease Success Story

Actual and Expected Death Rates for Coronary Heart Disease, 1950–1998



Marks JS. The burden of chronic disease and the future of public health. CDC Information Sharing Meeting. Atlanta, GA: National Center for Chronic Disease Prevention and Health Promotion; 2003.

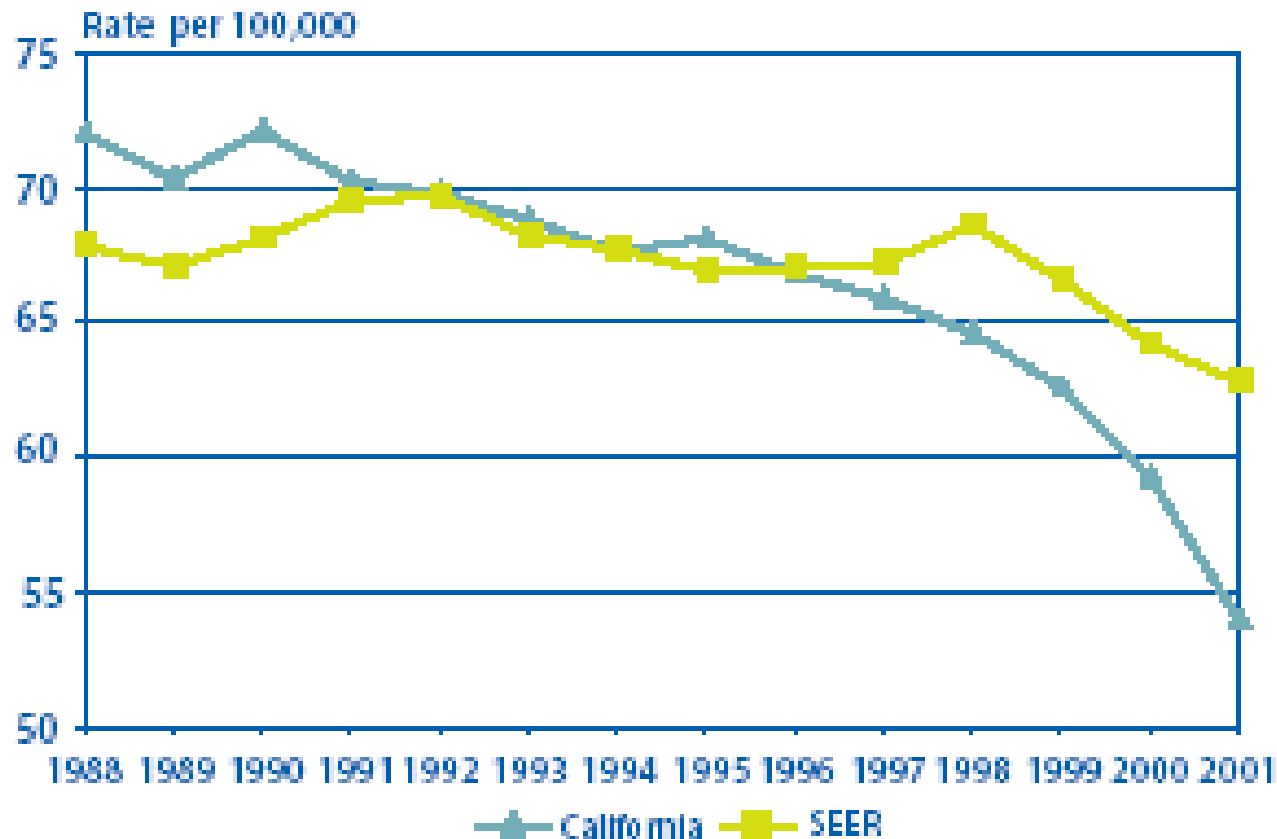
California vs. Rest of US: Adult Cigarette Consumption 1984 to 2004



California State Board of Equalization (packs sold) and California Department of Finance (population). U.S Census, Tax Burden on Tobacco, and United States Department of Agriculture. Note that data is by fiscal year (July 1-June 30).

Lung Cancer Incidence: California Vs. Rest of U.S.

1988-2001



U.S minus CA
(SEER)*: ↓ **5.9%**

California: ↓ **19.5%!**

Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Health Services.

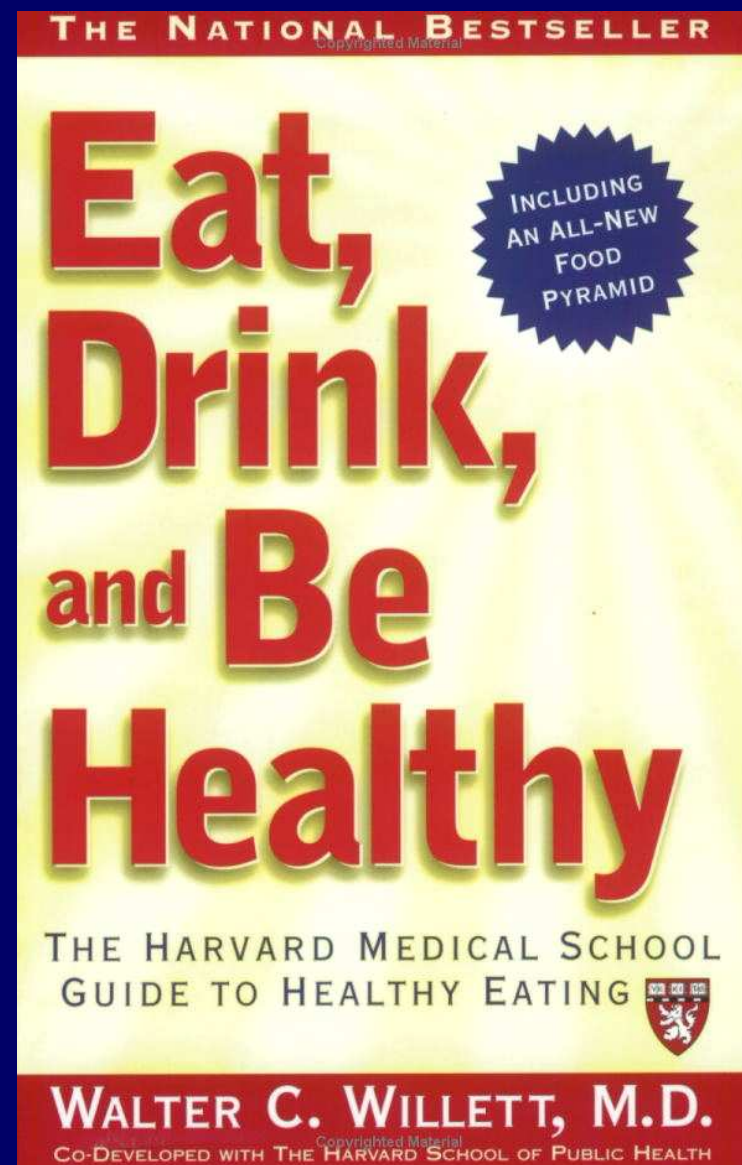
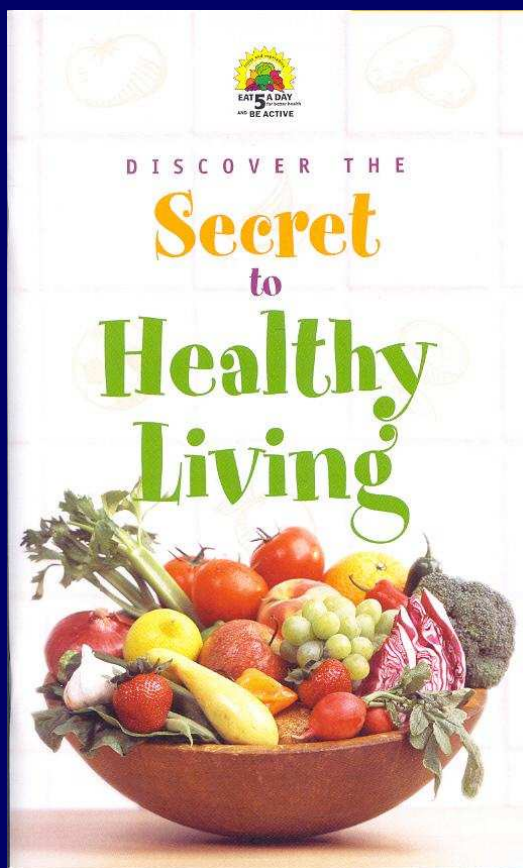
Prepared by the California Department of Health Services, Cancer Surveillance Section.

***SEER includes 14 cancer registries from across U.S**

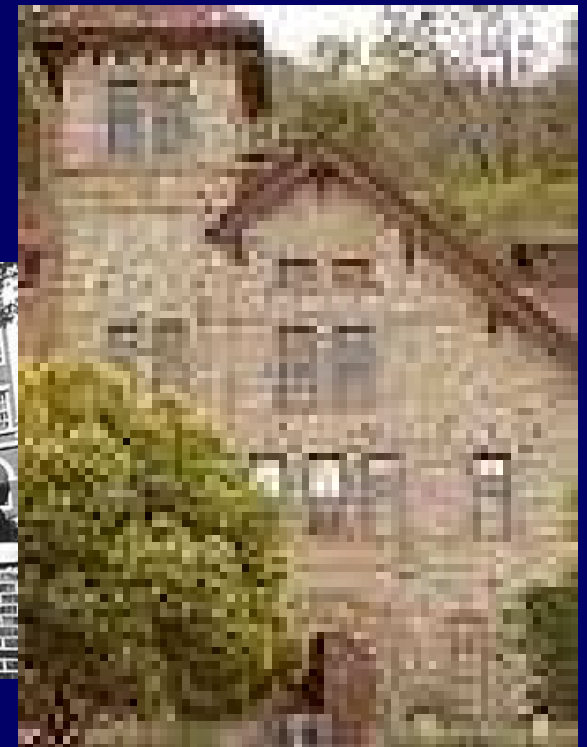
American Cancer Society, CA Division and Public Health Institute, CA Cancer Registry. California Cancer Facts and Figures 2005. September 2004.

We Can Turn This Around

- Personal Solutions



Culinary Institute of America



Food



Doof



**63 pounds HFCS consumed per year =
114,545 calories**

- **Creates**
 - **28 lbs of addition body fat in one year**
 - **Or, Can burn off with:**
 - **318 hours of Intense Exercise or**
 - **477 hours (12 work weeks) of Brisk Walking**

Newest Wonder Drug

- Life span increase: 2 years
- Risk of Cardiovascular Disease: 40% less
- Rates of High Blood Pressure and Diabetes: Reduced
- Risk of breast & colon cancer: Reduced
- Mood and mental health status: Improved
- Body Mass Index (BMI): Reduced
- Health care costs: \$300-\$400 less per year
- Cost: minimal

Benefits of Physical Activity

- Life span increase: 2 years
- Risk of Cardiovascular Disease: 40% less
- Rates of High Blood Pressure and Diabetes: Reduced
- Risk of breast & colon cancer: Reduced
- Mood and mental health status: Improved
- Body Mass Index (BMI): Reduced
- Health care costs: \$300-\$400 less per year
- Cost: minimal

Surgeon General's Report, 1996

STEPHEN A. MCCURDY, M.D.
Occupational & Environmental Medicine

One Shields Ave.
DAVIS, CA 95616-8638
(530) 752-8051

Lic. # G48070
DEA # BM2226656

PRI040816136073 00001

THIS DOCUMENT CONTAINS VOID PANTOGRAPH, MICROPRINTED SIGN. LINE, REVERSE RX, SECURITY BACKPRINT
THERMOCHROMATIC INK FEATURE, NUMBERING, PRINTED ON SAFETY PAPER

Name Richard Jackson, MD MPH

Address _____

Date

10/17/04

Arise one hour earlier than usual.
Follow with 1/2 hour sweaty
exercise, with additional 10 min
stretching and calisthenics.
Enjoy day. Repeat 4-6 d/week

☐ 1-24

☐ 25-49

☐ 50-74

☐ 75-100

☐ 101-150

☐ 151 and over

Units _____

Refill NR 1 2 3 4 5 (unlimited)

Void after _____

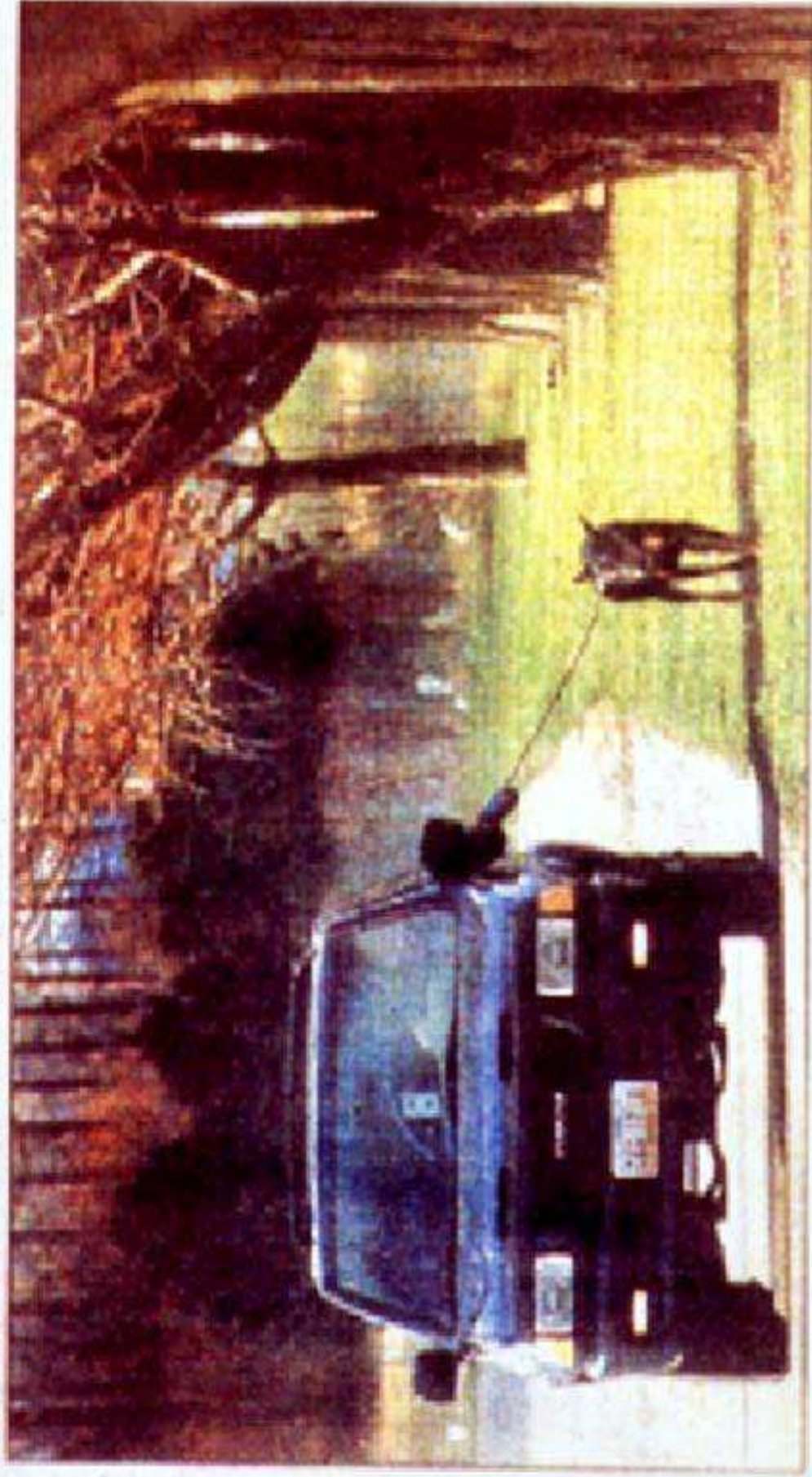
☐ Do Not Substitute-Dispense As Written

Signature

S. McCurdy, MD, MPH

Prescription is void if more than one (1) controlled substance prescription is written per blank.

* CANINE CONSTITUTIONAL



Donna Kavanagh/Photograph

A brisk walk in the park keeps Mavis II in shape between dog to give her 3-year-old Outboarder his regular workout. They shows. His owner, Columbus resident Cathy Stumbo, got up early typically jog 15 miles in Marlboro Park.



San Diego, California

Economy...

Economic Growth, strength in
agriculture, jobs, industry

Environment...

Healthy air, water, food & healthy places
to live, work, play

Equity...

Access to all aspects of *community*
is fair for all residents

Urban Sprawl, Physical Activity, Obesity, and Morbidity

“Those living in Sprawling counties were likely to walk less ($p=.004$), weigh more ($p<.001$), and have a greater prevalence of hypertension ($p=.018$) than those living in compact counties.” (average six pound difference)

Ewing R et al: American Journal of Health Promotion
18 (1) Sept/Oct 2003

10,000 Steps a Day

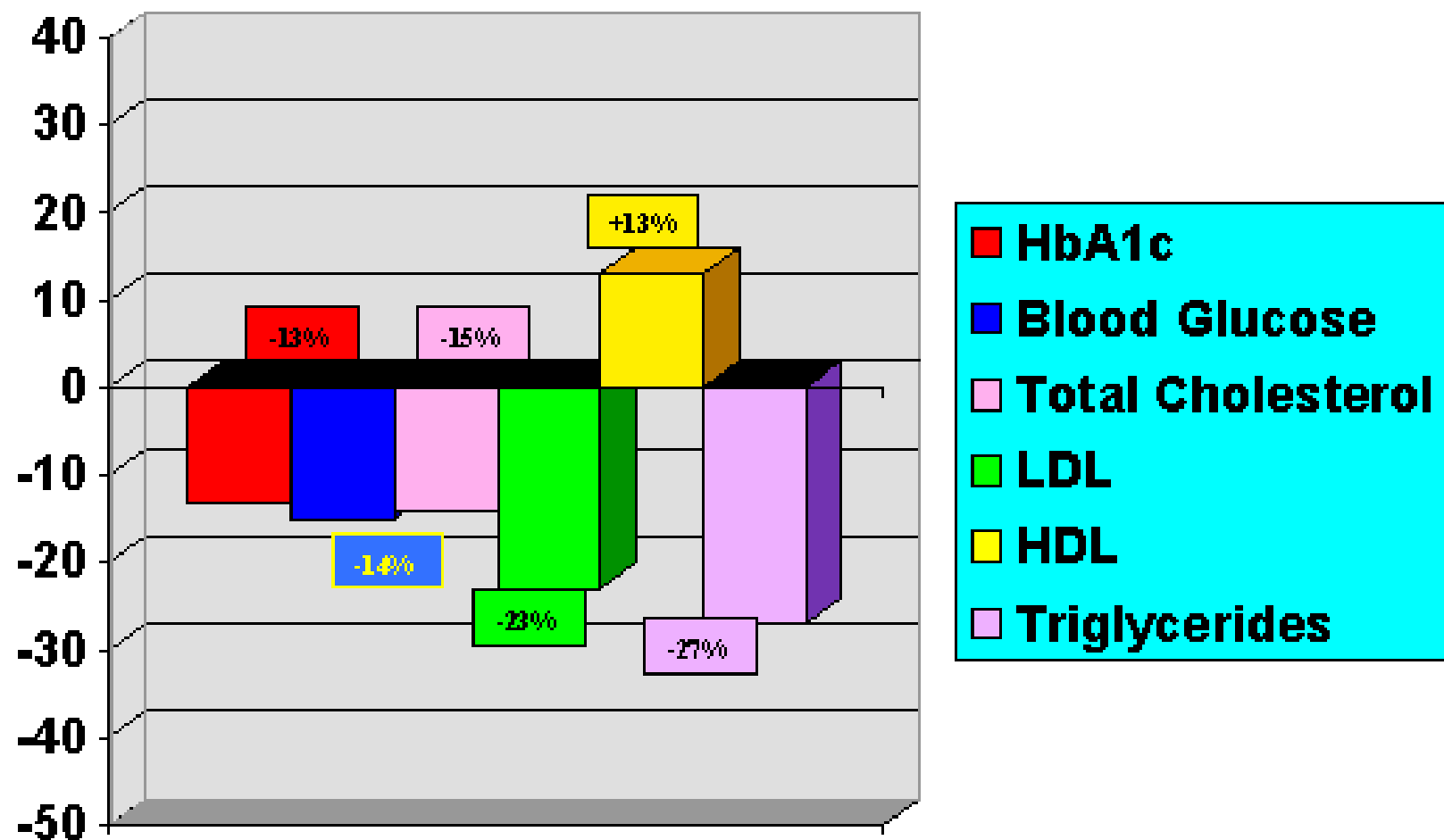
Originated from Japanese: “*Manpo-Kei*”



10,000 steps

- 3234 people with IGT (Pre-Diabetes)
- walked or exercised five times a week for 30 minutes
- lost 5% to 7% of their body weight
- reduced their risk of diabetes by 58%

Benefits of 10,000 steps



Diabetes Prevention Program Study, 2003

Obesity and Time Spent in Cars

Likelihood of being overweight...

Every additional hour spent in the car per day:  6%

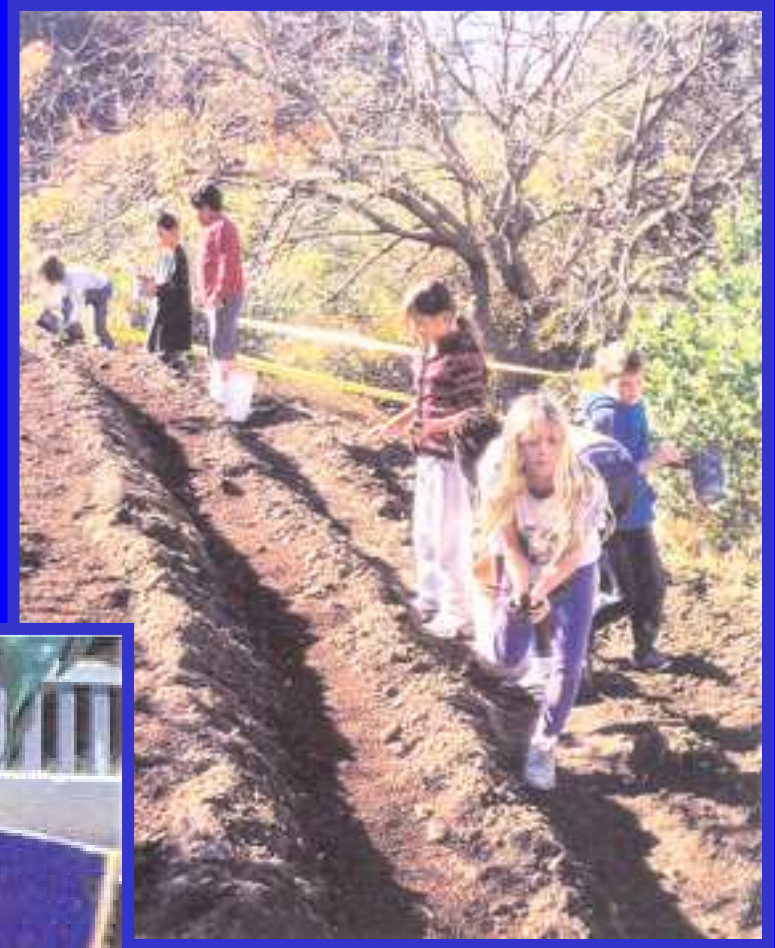
Every additional kilometer walked per day:  4.8%



Frank LD et al. AJPM 2004; 27(2).

School Gardens

Exercise, Learning,
Cooperation, Fun, and



It Tastes good



- CDC now mandates its new Buildings have attractive, daylit stairways at main entrance.
- Elevators require more effort to get to than stairs

- Richard Joseph Jackson,
MD, MPH

State Public Health Officer
California Department of
Health Services
1501 Capitol Avenue

- Suite 6001
MS 0003
Sacramento, CA 95814
- 916 440 7400



RJacks06@dhs.ca.gov

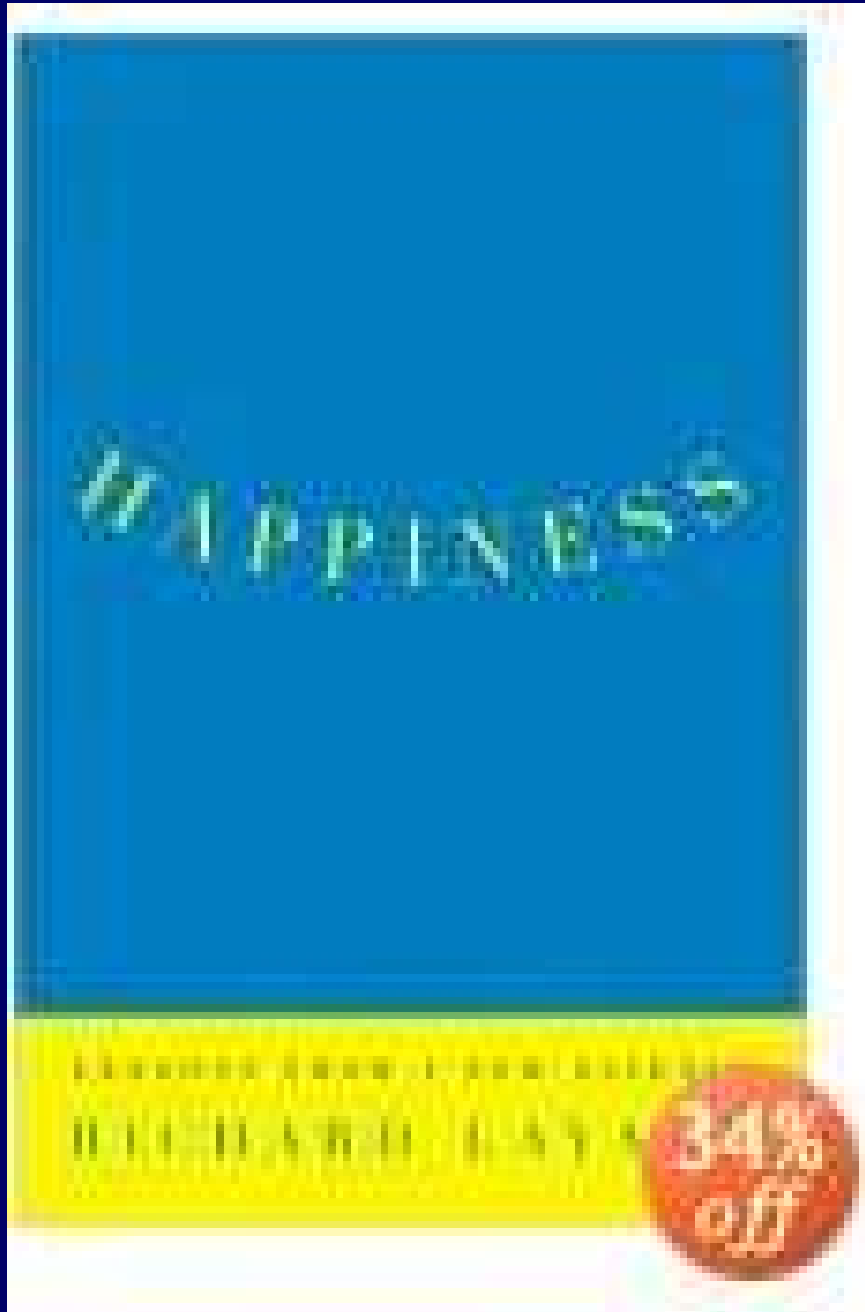
Disease in the 21st Century

- Diseases and costs of care for Aging Populations.
- Overweight: Diabetes II, Heart Disease
- Mental Disorders: Depression, Anxiety, Developmental, Substance Abuse
- Macro-environment: Climate, Conflict

AMERICAN MANIA

PETER C. WHYBROW, M.D.

WHEN MORE
IS NOT
ENOUGH



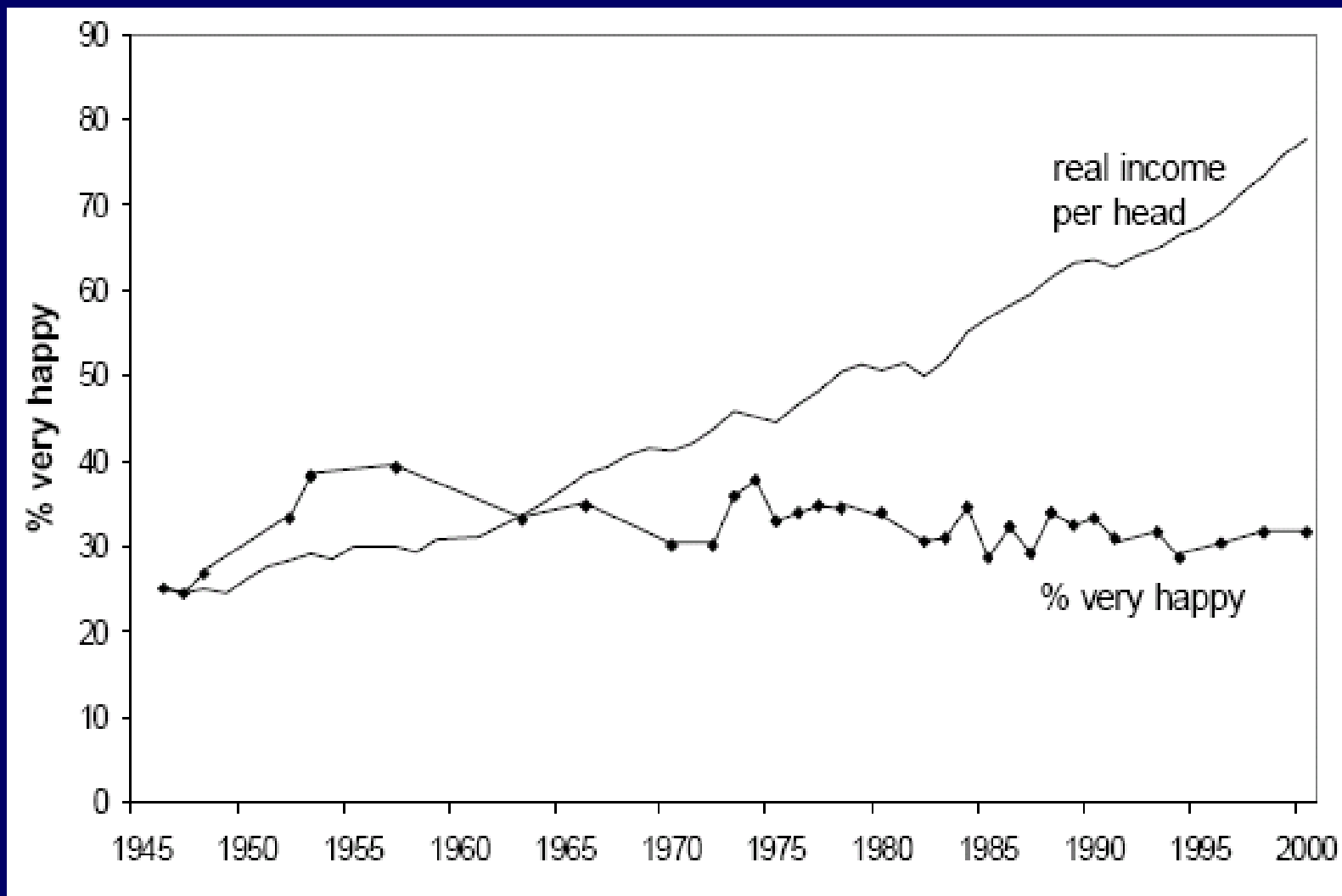
Richard Layard

London School of Economics



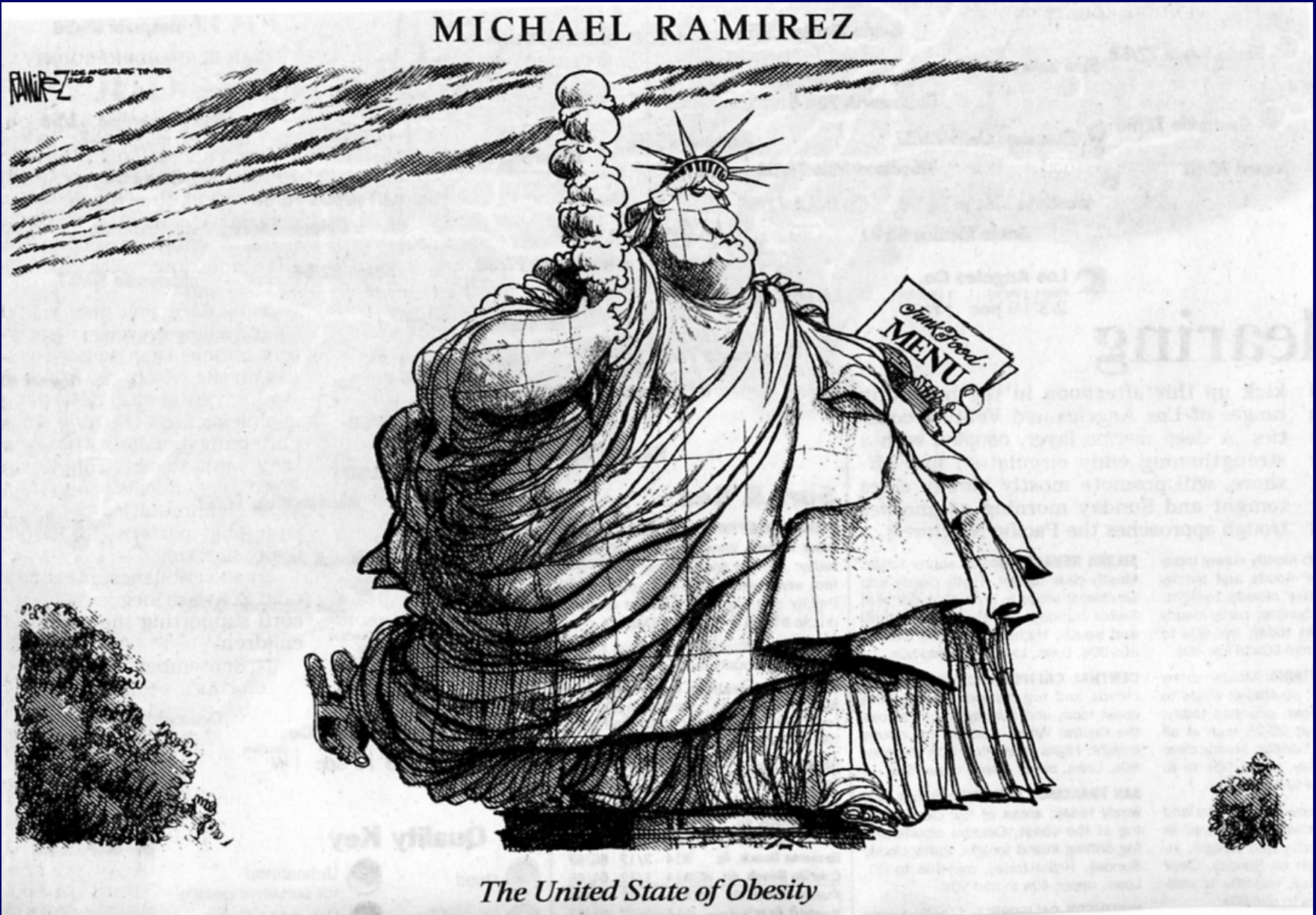
Income and Happiness- USA

1945 to 2000



"The United State of Obesity"

MICHAEL RAMIREZ



Los Angeles Times, 6/6/05